T ENGINEERING LIBRARY

FEB 6 - 1947

Paper TRADE JOURNAL

REG. U.S. PAT. OFF.

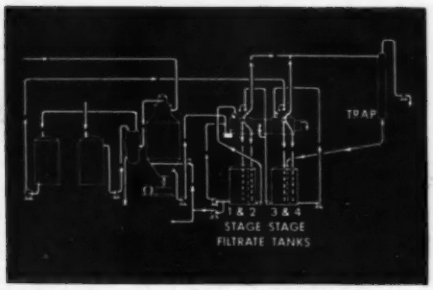
VOLUME 124, NO. 5 JANUARY 30, 1947

Reduce EVAPORATOR LOADS ... Save FUEL

3-Drum, 5-stage Swenson-Nyman Pulp Washer

with

Swenson-Nyman Pulp Washers...



Flow sheet of 2-drum, 4-stage installation

Numerous installations of Swenson-Nyman Pulp Washers have demonstrated the ability of this equipment to wash pulp clean with a low dilution factor. In a typical instance, the dilution factor is 1.8 pounds of water per pound of AD pulp; while soda losses amount to only 25 to 35 pounds per ton of pulp.

This extremely high efficiency is obtained by scientific engineering of the equipment itself—a rotary vacuum filter design that incorporates multi-stage counter-current washing in a single drum—and the equally scientific application of the equipment to the particular type of pulp being washed.

Present trends are toward an increasing number of washing stages ... 3, 4, 5, and even 6 stages are now being employed, thus making greater use of the wash water.

The Swenson-Nyman Pulp Washer operates as a closed system, avoiding chemical loss to the sewer ... and it minimizes foaming, the most troublesome aspect of the pulp washing operation. A full description of this equipment is given in Bulletin F-104.

75th ANNIVERSARY

- Black Liquor Evaporators
- Digester Blow Condensers
- Pulp Washers
- Causticizers
- Surface Condensers
- Lime Sludge Filters
- Kraft Pulp Deckers

SWENSON

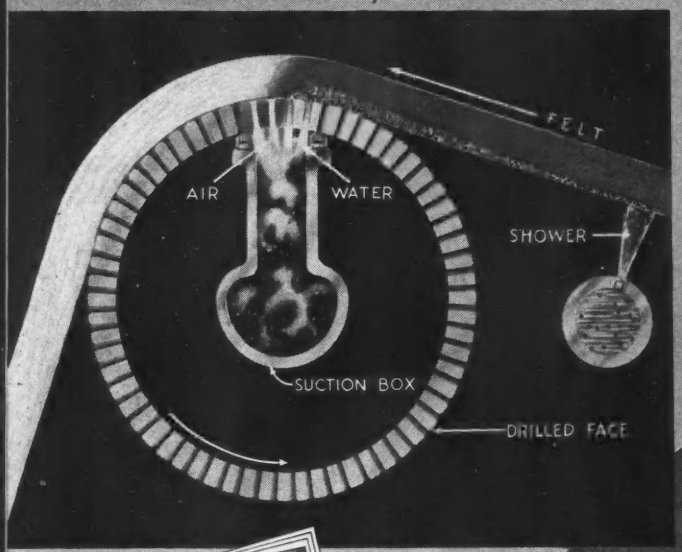
SWENSON EVAPORATOR COMPANY

Division of Whiting Corporation
15687 Lathrop Avenue, Harvey, Ill.
Eastern Sales Office and Export Department:
30 Church St., New York 7, N. Y.

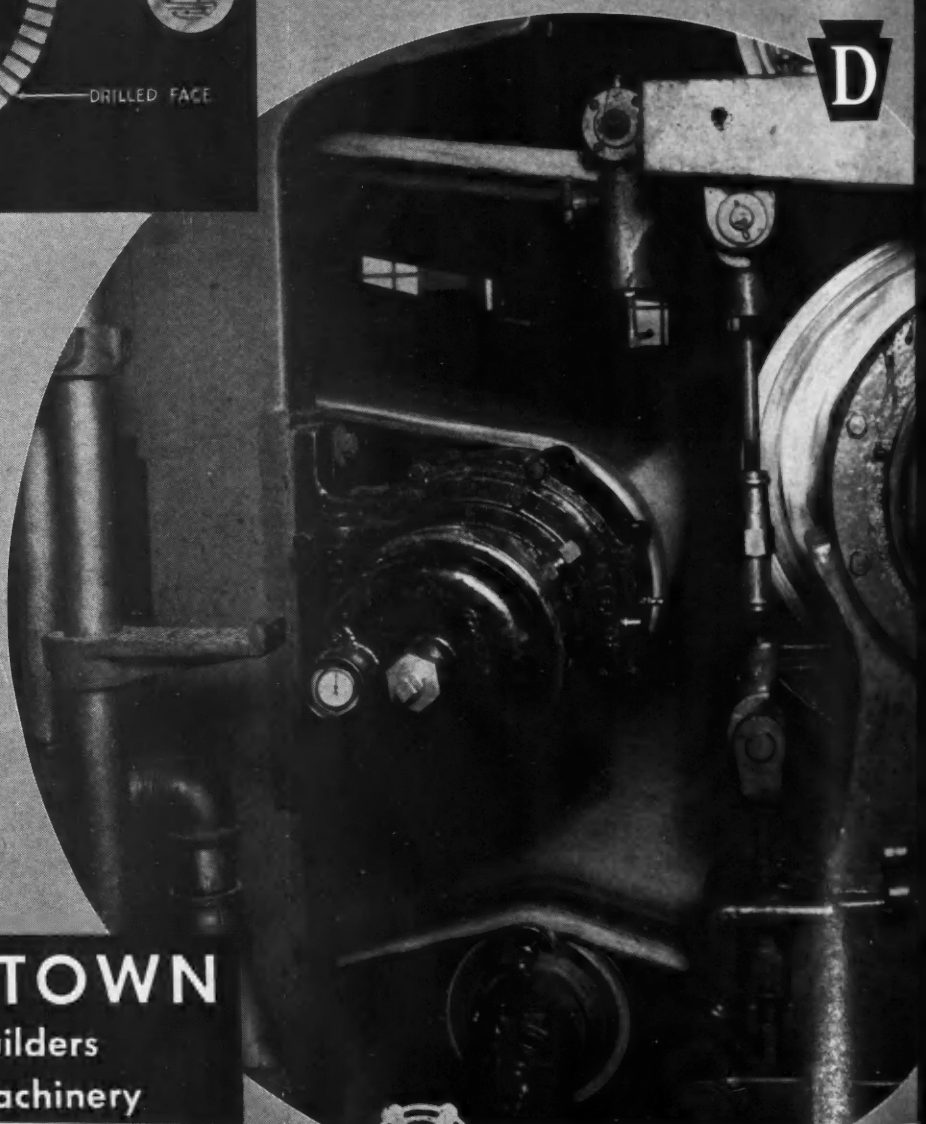
SEE THE "Straight Line" OF FELT CLEANING IN THE PHOTOGRAPH AT LOWER RIGHT

The sharp, distinct change of felt color from dark to light gray in the photo shows the cleaning and conditioning action of the Downingtown Suction Felt Roll. This is straight-across-the-felt-action which you have continuously and with safety. Sectional drawing shows how the roll is installed. It requires no drive; travel of the felt turns the roll, which is mounted in anti-friction bearings. Takes only about one-tenth the power consumed by drag of flat boxes. Over 200 now in use.

DOWNINGTOWN MFG. CO.
DOWNINGTOWN, PA.



New Catalog
Write for it today



Installation on a 214 inch fourdrinier making machine coated papers.

DOWNINGTON
Designers & Builders
Paper Making Machinery

IN THIS ISSUE

JANUARY 30, 1947

Paper Industry Argues for American Living Standards	7
Calder Predicts Two Good Years	7
Midwest Market Firm With Prices Steady	7
House Committee Gets Bill to Investigate Paper	7
McCabe Sees New Era Ahead for Industry	8
Eagle Lodge Unhappy Over Shorter Week	8
Blank Book Dinner Honors Old Timers	8
San-Nap-Pak Consents to Infringement Judgment	8
West Coast Logging Industry Studies Forest Economy	10
Canada Measures Effect of Raises	10
Marathon Earnings Increased a Million	12
Paper Group Hears Expert on Coating Problems	20
Luke Johnsos Tells How the Bears Won	20
Financial News	12
Imports	22
Trends	26
Markets	28
Prices	32
Production Ratio Report	38
Editorial	39
Classified Advertising	56

Technical Section *("TAPPI")*

Forestry Problems in Maine	41
The Effect of Certain Variables in the Operation of Rotary Vacuum Pulp Washers	44
United States Patents on Papermaking Fourth Quarter, 1946	50

PAPER TRADE JOURNAL IS INDEXED IN INDUSTRIAL ARTS INDEX

INDEX TO ADVERTISERS ON PAGE 70

Volume 124 — **Number 5**

PAPER TRADE JOURNAL
REG. U. S. PAT. OFF.

Executive and Editorial Offices: 15 W. 47th St., New York 19, New York
Published Every Thursday by Lockwood Trade Journal Co., Inc.

GEO. E. LOCKWOOD, *President & Treasurer* ARTHUR E. GORDON, *Vice-President* JOSEPH P. HORGAN, *Secretary*
W. L. COOK, *Editor* • HARRY I. JENSEN, *Assistant Editor* • R. G. MACDONALD, *"TAPPI" Editor* • F. B. GROSSE, *Make-Up Editor*

Eastern Representatives
BRUCE E. BROWN
15 W. 47th St., New York 19, N. Y.; Phone BRyant 9-0860
EDWARD H. DOERING
15 W. 47th St., New York 19, N. Y.; Phone BRyant 9-0860

Pacific Coast Representatives
ROY M McDONALD & CO.
San Francisco, 4, Cal., 564 Market St.;
Los Angeles, 6, Cal., 1323 Venice Blvd.; Seattle, 1, Wash., 1411 Fourth Ave.

Mid-Western Representatives
H. K. VINTON
123 W. Madison St., Chicago 2, Ill.; Phone: RAndolph 4780
FRANKLYN H. OLSEN
P. O. Box 52, Cleveland 21, Ohio; Phone: Hillcrest 1124-W

Representative for Denmark, Norway, Sweden and Finland
OXFORD TRADING AKTIEBOLAGET
Bibliotekgatan 6-8, Stockholm, Sweden

Subscriptions: (Payable in advance) By the year, $5.00; Single Copy 15 cents. *Postage Extra: To Canada, $2.00; To Other Foreign Countries, $3.50.*
Member Audit Bureau of Circulations.

PAPER *established Feb. 17, 1899, combined with* PAPER TRADE JOURNAL *Nov. 16, 1899,* PAPER *established Sept. 21, 1910, combined with* PAPER TRADE JOURNAL *Feb. 19, 1926.*

All rights to the above titles reserved.

PAPER TRADE JOURNAL *is entered as Second Class matter at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office at Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U. S. A.*

Copyright 1947 by the Lockwood Trade Journal Company, Inc. The contents of PAPER TRADE JOURNAL *including all articles, illustrations, etc., are covered by copyright and may not be reprinted except by permission.*

CALENDAR OF COMING EVENTS

February 23-27, 1947—The American Paper and Pulp Association, Annual Meeting, The Waldorf-Astoria, New York City

February 24-27, 1947—Technical Association of the Pulp and Paper Industry, Annual Meeting, The Commodore, New York City.

February 25, 1947—New York Association of Dealers in Paper Mill Supplies, Inc., Annual Banquet, Hotel Commodore, New York City.

February 25, 1947—New York State College of Forestry Alumni, Annual Luncheon, Hotel Commodore, New York City.

March 31-April 1-2, 1947—National Paper Trade Association, Annual Convention, The Waldorf-Astoria, New York City.

May 22-24, 1947—American Pulp and Paper Mill Superintendents Association, Annual Convention, Edgewater Beach Hotel, Chicago.

PAPER · · · America's 6th Industry

PAPER DIAPERS FOR FUTURE PRESIDENTS

(NEWS ITEM: *Paper diapers are now available at neighborhood drug stores.*)

Modern mothers are finding paper diapers more and more among the indispensables for bringing up baby. Made of high wet-strength paper, these soft filmy diapers are impregnated with a light antiseptic baby oil during manufacture. Paper diapers are especially acceptable because they are disposable. Each diaper arrives scientifically sanitary. Names of manufacturers furnished gladly on request.

Paper sacks for chemicals . . . paper cans for frozen food . . . paper tape for recording sound . . . new uses for paper calling for new standards of lightness and toughness, new standards of quality in performance. New responsibilities — new opportunities for the Pulp and Paper Industry.

The Puseyjones Organization is now devoting itself completely to the design and construction of Paper-Making Machinery built to new high standards of speed and efficiency, and to the modernization of existing machines.

Among the new machines under construction by Puseyjones are three of the largest and fastest Fourdrinier Machines, one for white paper for bags, one for Kraft liner board, and one for Kraft paper for multi-wall bags; also one Cylinder machine of record size and speed for the manufacture of floor covering felt. Other machines are under construction for the manufacture of M. G. Kraft specialties, facial tissues, and high grade bristols.

Puseyjones Engineers will welcome the opportunity to work with you in solving production problems.

THE PUSEY AND JONES CORPORATION
Established 1848. Builders of Paper-Making Machinery
Wilmington 99, Delaware, U. S. A.

Paper TRADE JOURNAL
REG. U. S. PAT. OFF.
VOL. 124, NO. 5 JANUARY 30, 1947

Paper Industry Argues For American Living Standards

WASHINGTON—"Reductions of duties on paper listed for negotiation will have a direct and disastrous reaction on the prosperity of 163 communities 50 per cent or more dependent on their paper mills," said Cola G. Parker, president of the Kimberly-Clark Corporation of Neenah, Wisconsin, speaking for the American Paper and Pulp Association of which he is first vice-president, in opposition to any reduction of duty rates on any grades of paper at a hearing last week.

"Among these communities, which are located in twenty-five states," he continued, "are many which are 100 per cent dependent on the operation of the paper mills. Such communities include Rumford, Maine; Luke, Maryland; Cloquet, Minnesota; Canton, North Carolina; Ticonderoga, New York; West Carrollton, Ohio; Spring Grove, Pennsylvania; and Kimberley, Wisconsin.

"In addition to the list of papers scheduled for negotiation will vitally affect sixty additional communities which are from 25 to 50 per cent dependent on the paper mills for their financial existence. On this latter list are such cities as Holyoke, Massachusetts; Kalamazoo, Michigan; Chillicothe, Ohio; Everett, Washington; and Rhinelander, Wisconsin.

"Paper mills must operate to a high percentage of capacity in order to meet their overhead and any reduction of duties which brings production down even slightly from normal levels results in unprofitable operation or loss of employment for the mill workers, or both. Such unemployment directly reacts on every community where a paper mill is located.

"The paper industry is an international industry, one in which every nation posseses mills of identical type, operating at substantially the same rates of speed, and there is no technological know-how in the United States which is not quickly learned if not already possessed by every other paper making nation. The fact that foreign paper mill wages are far below our own is the factor which makes it possible for any other paper making nation to sell paper in this country at less than our cost of production.

"Canada is thought of popularly as the country from which our imported paper comes. The fact that any duty rate concession granted Canada is immediately applicable to similar products from Scandinavian and other Northern European countries is forgotten or overlooked. It is true that when newsprint was placed on the free list, the United States newsprint industry migrated to Canada. However, the wage rates in Scandinavia are such that Sweden, Finland and Norway can and do in normal times ship to this country every grade of paper which Canada can supply.

"Scandinavian labor costs are from one third to half of the wages paid for

(*Continued on page 14*)

Waste Dealers Name Tyroler To Be Next President

NEW YORK—A nominating committee selected by the board of directors of the National Association of Waste Material Dealers, Inc., at its meeting last December and made up of William J. McCauley, A. Lapides and Ralph O. Williams, with Harris Goldman acting as advisory member, has unanimously nominated Joseph M. Tyroler of Tyroler Metals, Inc., Cleveland, Ohio, for the presidency of N.A.W.M.D. Mr. Tyroler has been first vice-president of the Association for a number of years. He was chairman of the convention committee in Cleveland in the Fall of 1940 and has been an active director of the association for some years.

Calder Predicts Two Good Years

SAVANNAH, Ga.—Alexander Calder, president of the Union Bag & Paper Corporation, declared in an interview here this week that "the outlook for the paper industry is very good for this year, and I think next year." He said "after that it may be different."

Mr. Calder stated that the bag factory extension at the Savannah plant would be finished in April, the fifth paper machine in August and the box plant in September. The directors of Union Bag & Paper Corporation declared a 50 cents dividend at their meeting here January 20.

Midwest Market Firm With Prices Steady

CHICAGO—Prices in the midwestern market remained firm during the week. Specific reports of any price advances were lacking although one or two mills were said to have increased prices recently to cover the advance in freight rates. This action, however, was not general in the territory, with the consensus of opinion being that most mills covered this advance, along with other cost factors, in the general rise in prices following the termination of price controls.

The trade seemed united in its opinion now that increased costs and a fair profit were covered, there was little possibility of any "gouging" through sporadically high boosts here and there. "The industry," said one Chicago paper trade executive, "expects to be around for a long, long time. It wants to have a fair record and each individual concern knows that what happens to the consumer trade now will be remembered when the market conditions ultimately reverse themselves."

Waste paper prices were reported to have held steady at $20 a ton for No. 1 mixed, $36 for No. 1 corrugated and $35 for No. 1 news at the mills. Mill demand was strong and collections were reported to be good.

House Committee Gets Bill To Investigate Paper

WASHINGTON—Full investigation of the newsprint supply for use of American publications, as well as the supply of paper products and pulpwood, is asked in a resolution introduced in the House last week by Representative Clarence J. Brown, Republican, Ohio.

The measure, House Resolution 58, has been referred to the House Rules Committee for action. It provides for an investigative committee of five members which the bill would "authorize to conduct a study and investigation of all matters related to the need for adequate supplies, for use in the United States, and for use in time of war, of newsprint, printing and wrapping paper, paper products, paper pulp and pulpwood," and all related matters. The investigation would inquire particularly into possibilities of increased production of these commodities in the United States, long-range; and short-range, of the possibilities of increasing supplies from Canada and other foreign sources.

McCabe Sees New Era Ahead For Industry

PHILADELPHIA — Speaking before more than two hundred members of the Chester Junior Chamber of Commerce and their "Bosses Night" guests at the Clubhouse, Thomas B. McCabe, president of Scott Paper Company, Chester, declared that "we are entering a new era of industrial and public relations.

"I am convinced," said Mr. McCabe, "that we will not win our future objectives on our potentialities, we will win them through our accomplishment."

Mr. McCabe, who was former U. S. Foreign Liquidation Commissioner, continued, "You have breathed new life and meaning into the slogan 'What Chester Makes, Makes Chester,' because you have made us realize the importance of the spiritual forces and the human relationships in the job of making goods. The spirit and teamwork which you have exemplified helped America to win the war. The war could not have been won without the endless stream of production from this country's great workshops, and Chester was one of the greatest. Most of you here tonight were in one or another of those workshops or in uniform on the battle front. You know that the rest of the world thought that our war production was the miracle of the ages and that our military machine was just as spectacular. In my travels around the globe I found what many of you must have found — that people in other lands are still puzzled as to how a great peace loving democracy like ours could in a comparatively short time excel the combined war machines of Germany, Italy and Japan."

Citing numerous important improvements sponsored by the Junior Chamber of Commerce, Mr. McCabe said:

"After achieving the increased production which will be attained from a better understanding and more unified effort of our people, we must sell it. The field of distribution offers another great opportunity to you men of the Junior Chamber of Commerce. The sales executives are going to be very important men in the future. Many of our old pre-war distribution systems are either paralyzed or wrecked because we have been in the seller's market for the past seven years.

"Sales executives of the future will be compelled to lift their sights to new horizons and expand their operations for new products and new markets. It has been said that where there is no vision the people perish. I would like to paraphrase that to read that where the sales executive has no vision the business will perish. There must be an ever-widening of the distribution channel and a stronger tempo of sales effort.

"Even that is not enough. Tomorrow's selling will have to be less wasteful, more efficient and effective, more intelligent and more compelling. The type and character of salesmen will of necessity have to be vastly improved. The 140 million Americans will satisfy their wants and needs only if the incentive to buy is made as strong as the incentive to sell. And that is the job of advertising and selling. It is a job of creating desires so strong that men will work harder, be more productive, to attain them. The desires need to be such that every person, every family, will want his full share of the expanding fruits of our way of life and our higher standard of living."

Expressing his views of the future prospects of business, Mr. McCabe added, "My appraisal leads me to the conclusion that although there are dark clouds ahead especially in the area of labor disturbances and to the possible effects of lowering certain price structures, we face the greatest trade opportunities in our history. In facing this opportunity, however, we must recognize that it is much easier to arouse the various elements of our society to a war than to a peace program, because war is urgent and dramatic and lives are at stake. Planning for peace is not only more difficult psychologically, but the problems are more complex and will require political and industrial statesmanship of the highest order. We've got to realize that peace and world trade too are urgent and dramatic, and lives are at stake."

In conclusion, President McCabe said: "I offer these words from the great drama 'Cavalcade' — Gentlemen, let's have a toast that this country we love so much, may she live in dignity, in greatness and in peace."

Eagle Lodge Unhappy Over Shorter Week

HOLYOKE, Mass. — Members of the Eagle Lodge of Papermakers, No. 1, dissatisfied with present working conditions, will meet shortly, President Robert Cameron said this week. He said the Lodge's representative committee has been instructed to take further steps toward correcting existing conditions. The dissatisfaction centers around the six-day, 48-hour week which has been shaved to the five-day, 40-hour week program.

President Cameron said that at a meeting the Papermakers protested the speedup program to do the work of six days in five. "This means the take-home-pay has been cut 12 hours weekly," he pointed out today in explaining the situation.

The committee will report on this when the special meeting is held shortly, Cameron said. Most of the paper mills in this city are now operating under the five-day 40-hour week schedule.

President Cameron and Financial Secretary Andrew Beaton were voted the two delegates to attend the national convention.

Blank Book Dinner Honors Old Timers

HOLYOKE, Mass. — The National Blank Book Company will hold a Service Award Dinner January 30 at the War Memorial Building, to honor the 349 men and women employees who have served the company 15 years or more. This remarkable record of the 104-year-old company means that 35 percent of its total number of employees is in this honored group.

The group is divided in these classes: 50 years and up, 11 members; 40 years and up, 43 members; 35 years and up, 24 members; 30 years and up, 54 members; 25 years and up, 75 members; 20 years and up, 78 members, making a total of 9944 years of employment.

Over 600 are expected, as wives will attend with their husbands. Longtime service employees will be present from the Chicago and New York branches of the company.

Speakers at the award ceremonies will be: President, J. M. Towne, Mayor Henry J. Toepfert, John Hazen, president of Holyoke Chamber of Commerce; Paul Burbank, president of the National Stationers Association, Washington, D. C., who will speak on National and the industry; Ed Donahue, president of the National Old Timers club and Richard P. Towne, treasurer of the National. General Sales Manager, Paul B. Buckwalter will be master of ceremonies.

The general committee in charge is: J. M. Towne, general chairman, assisted by D. C. Hegarty, Andrew Mangum, Cecilia Reed, D. D. Greiner, Harold Hansen, E. G. Kjoller, Loretta Valiauet, A. E. Farr, Joseph St. Laurent, C. G. Rising, Francis Croke, A. B. Hughes.

San-Nap-Pak Consents to Infringement Judgment

NEW YORK—The Cowles Company and The Black-Clawson Company have obtained a judgment in a patent infringement suit in the United States District Court for the Southern District of New York brought against San-Nap-Pak for infringement of Cowles Patent No. 2,351,492 covering the hydrapulper as manufactured by Shartle & Dilts, divisions of Black-Clawson. The complaint alleged infringement of the Cowles patent by reason of use of San-Nap-Pak of an Apmew pulper purchased from American Paper Machinery & Engineering Works, Inc.

The judgment consented to by San-Nap-Pak holds the patent valid and infringed by the use of the Apmew pulper, and enjoins San-Nap-Pak against further use of such machines. The judgment also refers to a settlement under the terms of which San-Nap-Pak has conveyed the infringing machine to the Cowles Company.

A Thought for the New Year

Wherever the elimination of corrosion is a "must"—not only for the prevention of equipment deterioration, but for minimizing product losses — Stainless Steel provides a practical means for longer lasting and more economical construction.

No other commercial metal can equal Stainless Steel in its high resistance to so many types of corrosives. None is more versatile in its application possibilities.

Today's demands for capacity production make it imperative to take the fullest advantage of the well-proven benefits that Stainless Steel, in its many analyses and various forms, has to offer.

In U·S·S Stainless Steel—a perfected, time-tested product—you can obtain all the superior properties of Stainless at top perfection.

To insure consistently exact and uniform quality, U·S·S Stainless is produced on special equipment under the close and precise control of skilled and experienced men who make stainless steel *only*.

Their entire attention is devoted to constantly perfecting its characteristics, improving its performance and widening the scope of its application. No other manufacturer can offer you Stainless Steel in such a *complete* range of forms, sizes and finishes in so many different analyses.

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York
7-29

USS STAINLESS STEEL UNITED STATES STEEL

UNITED STATES STEEL

West Coast Logging Industry Studies Forest Economy

VANCOUVER, B. C. — Organized five short years ago the Truck Loggers Association of British Columbia has now become one of the most influencial organizations in the industrial field, and at its annual convention at Vancouver reported a registration of over 600 members, with approximately one thousand persons attending the final banquet, thereby setting an all-time dinner catering record for the Hotel Vancouver, convention headquarters. The Association now embraces 135 operators carrying on logging all over Vancouver Island and from the northern coastal area of B.C.'s mainland as far east as the Fraser Canyon.

O. A. Buck, president, and Fred Adames, secretary, arranged a particularly interesting program for this year's convention. Technical subjects dealt with included a discussion on the new super-size logging trucks, papers on torque converters, brake sets, logging practices, vocational training in the woods, accident prevention, tires, insect destruction, etc.

One of the highlights of the convention was an open forum on the utilization of logging waste under the chairmanship of the Hon. E. T. Kenney, Minister of Lands and Forests for British Columbia. Ed. Stamm, Crown Zellerbach Corporation, Portland, Ore., and former president of the Pacific Logging Congress, led the discussion. It was made evident at the forum that the majority of B.C. truck loggers accept and support the principle of sustained forest yield. Mr. Stamm pointed out that while the greatest immediate problem in logging small timber was a guarantee of a continuous market for re-logged material, it was necessary for the entire industry to work hard to get the optimum forest utilization from previous "waste" logs.

"Once the forest floor is cleaned up of this material the chances of new crops surviving and growing into healthy trees will be that much better," he said. "Re-logging is of particular interest to smaller operators since crews of a few men using light, portable equipment, have been found the most effective.

Henry Dennis, logging manager, Soundview Pulp Company, Everett, stressed the increasing importance and value in the industry of hitherto "waste" timber now being logged by use of light equipment and small but highly trained crews. Clyde Martin, chief forester, Weyerhauser Timber Co., Tacoma, said more and more small plants and sawmills were being placed in operation by even the largest operators to use re-logged lands and salvage forest waste. While Mr. Martin advocated overcutting at the present time to meet abnormal demands for housing, he said that to ensure renewal of crops the average normal cut should be spread out over periods of at least 20 years.

Over 40 percent of the operators in the United States now use practices involving sustained yield, E. T. F. Wohlenberg, Portland, Ore., and forest counsel to the Western Forestry & Conservation Association, told the forum audience. He reviewed the 100 year Shelton sustained yield contract between the forest industries and the U. S. Government, and said some of the big companies are now doing more

(Continued on page 16)

Imperial Advances Karpeles and Putnam

HUDSON FALLS, N. Y. — Seymour Karpeles, formerly director of sales, has been made assistant general manager of the pigment color division of the Imperial Paper & Color Corporation. N. W. Putnam has been appointed general sales manager. Before joining the organization in 1935, the former was employed as chief chemist and general superintendent by the Sinclair and Valentine Company, of New York. Mr. Putnam became associated with the firm in 1927 as a sales representative in the Cleveland office and later was made district manager. In 1941 he was brought to Glens Falls as sales promotion manager.

Polytechnic Class Visits Riegel Paper Mill

BROOKLYN, N. Y. — The class in "Pulp and Paper Technology" at the Polytechnic Institute consisting of technical and sales personnel of pulp and paper plants and dealers on January 18 visited the plant of the Riegel Paper Company at Milford, N. J. The group of thirty, led by Prof. Robert S. Aries, inspected the equipment and familiarized themselves with the techniques in the manufacture of glassine and grease proof papers, as well as coating and printing.

The second term of the class, dealing mainly with paper, paper specialties, paperboard and the combination of plastics and paper, is opened to qualified men from industry and offered on Thursday nights from 6:00 to 8:00 P.M. in the Eagle Building, Borough Hall, Brooklyn.

Thilmany Staff Elects

KAUKAUNA, Wis.—The Thilmany Employes Association of the Thilmany Pulp and Paper Company recently elected Jewell Toms as president; Martin Feldman, vice president, and L. C. Smith, secretary.

Canada Measures Effect of Raises

TORONTO, Ont.—Price increases last week on sulphite bond papers of $15 a ton and $15 to $20 a ton on rag grades, while certainly welcome, are not such a bonanza as those who recall the increase secured last April might think. Fine paper producers say the price increase granted last spring only offset wage increases already given mill workers and did not compensate mills for the many other increases in costs taking place since controls were instituted in 1941. Paper officials maintain that, on an average, labor costs have gone up 100 percent, with pulpwood costs in the same order; while selling prices have only risen by 25 percent.

However, the new increases bring the selling prices on book, writing and so-called specialty papers to around $175 a ton and a seller's market continues, with production at an all-time high.

Most mills, it is understood, have union contracts which expire in April next. What will happen after that, according to one official "depends on the state of demand for our products. Unless the business bubble bursts, we may see our latest price increases go out the window by offsetting wage increases."

Other company officials say the latest price increase is a step toward decontrol. At the moment, it is pointed out, the fact that pulp producers can get much higher prices in the United States than on their domestic sales, would react most unfavorably on non-integrated Canadian paper mills, were price controls removed. Bleached sulphite pulp, for instance, sells at $115 a ton in the United States, while the domestic price is only $93, and if supply controls were withdrawn this price differential would draw all surplus Canadian woodpulp to the United States at the expense of Canadian mills, which have to purchase pulpwood in the open market.

The latest price increase on paper and pulp will not bring any new production into the market at this time. All mills are producing to the effective limit of their machine and mill capacity. Some increase in supplies in 1947 can be anticipated, however, through additional plants built last year by Marathon and Kalamazoo Vegetable Parchment Co. Provincial Paper recently announced plans to bring new production to the market by mid-1947.

Last week's announcement authorizing price increases on market pulp in Canada, ranging from $1 to $12 a ton and on paper and board ranging from $7.50 to $30 a ton, however, should be reflected in pulp and paper securities.

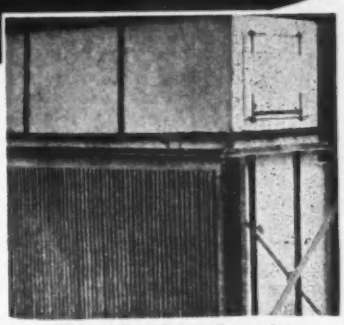
In the case of woodpulp the increase will mean increased gross earning power of perhaps $1.5 millions annually, "The Financial Post" estimates, based on 250,000 tons of wood pulp sold annually in the domestic market.

Stop Wasting Heat You Need

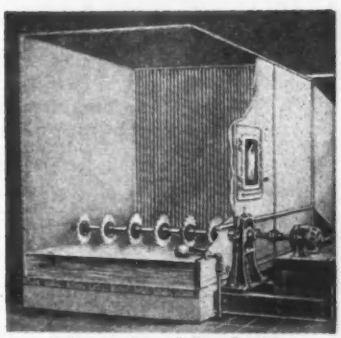
New Method Recovers Millions of B.T.U.'s From Heat Being Wasted

This modern Ross system, combining use of the Ross Briner Economizer with the Ross Scrubber, saves thousands of pounds of steam per ton of production by extracting heat from exhaust vapors. By this method either or both fresh water or white water is heated as well as exhaust air for maximum heat recovery. White water is heated first, then air by the economizer and finally the fresh water. This remarkable new heat recovery method is effecting saving of $1.00 and more per ton of paper produced. Installation of this system is practical even in the South.

Where less than maximum heat recovery is required it is possible to install any one or a combination of Ross Briner Economizer and fresh or white water heating equipment. Consult our engineering staff on your particular requirements.



View of Ross Briner Economizer



Cutaway view of Ross Scrubber

ROSS SYSTEMS

J. O. ROSS ENGINEERING CORP.

DESIGNERS AND BUILDERS OF AIR PROCESSING SYSTEMS

350 MADISON AVE., NEW YORK 17, N. Y.

ROSS CONTROL OF AIR FOR MODERN INDUSTRY SYSTEMS

201 N. Wells St., Chicago-6 • 79 Milk St., Boston-9 • 12953 Greeley Ave., Detroit-3 • 1709 W. Eighth St., Los Angeles-14

ROSS ENGINEERING OF CANADA, LIMITED — MONTREAL 19, P. Q.

CARRIER—ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

FINANCE

Marathon Earnings Increased a Million

WAUSAU, Wis. — A quarterly dividend of 25 cents per share, payable Feb. 20 to stockholders of record at the close of business Jan. 31, was declared by directors of the Marathon corporation at their annual meeting here last week. The dividend declaration follows completion of a record fiscal year closing last October 31 which saw net sales increase $1,303,440 over the previous year to a total of $33,244,137. Net earnings amounted to $2,734,034, compared to $1,360,437 for the previous year.

All directors were re-elected at the stockholders meeting and officers were re-elected at a meeting of the board immediately following.

Officers of the corporation are D. C. Everest, Wausau, president; Leo F. Croy, Menasha, executive vice-president in charge or operations in pulp, paper, paper board and converted products in the United States; John Stevens, Jr., Wausau, vice-president; Allen Abrams, Wausau, vice-president in charge of research and chemical plant operations; Roy J. Sund, Menasha, vice-president in charge of manufacturing of pulp, paper, paper board and converted products in the United States; A. M. Van Douser, Wausau, secretary-treasurer; R. M. Altman, Wausau, assistant secretary-treasurer; and Maynard Reierson, Wausau, assistant secretary.

Directors renamed by the stockholders were: Abrams, J. S. Alexander, Lester Armour, Chicago; Croy, L. F. V. Drake, New York City; Everest, C. S. Gilbert, M. P. McCullough, Chicago; Stevens, C. J. Winton, Minneapolis; and Aytch P. Woodson, Wausau.

The 400,000 shares of common stock outstanding at the beginning of the fiscal year had been split in a two-for-one basis and a stock dividend of 10 percent was declared, which brought the total issue to 880,000 shares. The sale of 420,000 shares increased the total common stock outstanding to 1,300,000 shares.

From the proceeds, $10,000,000 of funded debt was paid off and funds provided for the completion of the firm's Canadian pulp mill and other construction.

Hooker Electrochemical Declares Dividends

NIAGARA FALLS, N. Y. — Dividends on both preferred and common stock have been declared by the board of directors of the Hooker Electrochemical Company. A quarterly dividend at the rate of $1.0625 has been declared upon the company's $4.25 cumulative preferred capital stock, payable March 27 to stockholders of record at the close of business March 1.

On the common capital stock, a dividend at the rate of 50 cents a share has been declared, payable February 26.

Liner Board Lack Slows Hinde & Dauch Operations

BUFFALO, N. Y. — A shortage of liner board for the manufacture of corrugated shipping boxes is restricting operations in the Buffalo plant of Hinde & Dauch Paper Company, District Manager Alex M. D. Martin reported. "We now are operating only one shift but if additional quantities of paper were available we would add another," he said.

A $400,000 expansion program underway at the plant is expected to be completed by June. It will provide a total of 162,000 square feet of manufacturing space. Plans also include a modern new office for both the operating and sales staffs and a package laboratory.

"Completion of the new facilities will result in the hiring of additional workers," Mr. Martin said. "We are planning to increase our force here by about 50 percent." The plant now employs about 110 workers.

"If we stopped taking orders today, we have enough on the books to keep the plant operating for seven months at the present rate," Mr. Martin said.

Garrett-Buchanan Stages Dinner for Organization

PHILADELPHIA—One hundred eighty-five employees of Garrett-Buchanan Company from Philadelphia, Reading, Baltimore and Lancaster were entertained at a banquet in the ballroom of the Benjamin Franklin Hotel on January 15th. Harry Conradi, O. Vorlander, Frank Davis and Mrs. Katherine Cooper were received into the 25-year Club, which now numbers thirty-nine, and were presented with gold signet rings set with onyx

FINANCIAL RECORD OF THE WEEK

New York Stock Exchange

High, Low and Last for Week Ending January 25, 1947

STOCKS

	High	Low	Last
A. P.-W.	5¼	4⅞	5¼
Armstrong Cork Co.	49⅞	48	49⅞
Celotex Corp.	29½	28½	29⅛
Celotex Corp., pf.	20½	19¼	20½
Certain-Teed Products Corp.	20¼	18⅞	19¼
Certain-Teed Products Corp., pf.	....	....	....
Champion Paper & Fibre Co.	25⅛	23½	23⅞
Champion Paper & Fibre Co., pf.	110½	110½	110½
Congoleum Nairn Co.	28½	26¼	27
Container Corp. of America	45¼	42⅛	43⅜
Crown-Zellerbach Co.	33⅛	29⅜	30
Crown-Zellerbach Co., pf.	127	127	127
Dixie Cup Co.	33	31¾	33
Dixie Cup Co.—A	53	51½	53
Flintkote Co.	36⅜	33¼	34½
Flintkote Co., pf.	....	....	....
Robert Gair	7⅜	6¾	7¼
Robert Gair, pf.	21	20⅛	20¾
International Paper Co.	51⅝	47⅛	48¾
International Paper Co., pf.	104	104	104
Johns-Manville Corp.	131¾	128	131
Johns-Manville Corp., pf.	....	....	....
Kimberly-Clark Corp.	23	22¼	23
Mac Andrews & Forbes	38½	37¼	37¼
Mac Andrews & Forbes, pf.	....	....	....
Marathon Corp.	26¾	25½	26
Masonite Corp.	59	55¾	56
Mead Corp.	19¾	18	19
Mead Corp., pf. 4¼	104	104	104
Mead Corp., pf. 2	48	48	48
National Container Corp.	37	34	36½
Paraffine Companies, Inc.	74	72¼	73½
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	23½	22¼	22¾
Rayonier, Inc., pf.	36⅝	36⅛	36⅛
Ruberoid Co.	....	....	....
Scott Paper Co.	45	44½	45
Scott Paper Co., pf.	100	98½	98½
Sutherland Paper Co.	45½	43	43
Union Bag & Paper Corp.	30⅜	27⅛	30
United Paperboard Co.	14¼	12⅜	13
U. S. Gypsum Co. rt	11¾	9½	11¾
U. S. Gypsum., 2a	94	88⅜	93⅜
West Virginia Pulp & Paper Co.	39¼	38	39
West Virginia Pulp & Paper Co., pf.	112⅝	112⅜	112⅝

BONDS

	High	Low	Last
Abitibi Power & Paper Co. 5s '53	....	....	....
Celotex Corp. 3¼s '60	103½	103½	103½
Certain-Teed Products Corp. 5½s '53	....	....	....
Champion Paper & Fibre Co. 3s '65	....	....	....
International Paper Co. 5s '47	....	....	....
Mead Corp. 3s '66	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending January 25, 1947

STOCKS

	High	Low	Last
Great Northern Paper Co.	44	39½	44
Hummel Ross Fibre Corp.	28⅞	26¼	28¼
St. Regis Paper Co.	9⅞	9	9⅛
Taggart Corp.	....	....	....

BONDS

	High	Low	Last
American Writing Paper Co. 6s '61	....	....	....

This MIRROR FINISH

reflects Smooth Cutting

... throughout the Long Life of a

SIMONDS

PAPER KNIFE

Look at the mirror-like finish of a Simonds "Red Streak" Knife, and you can *see* what super-smooth cutting it will give you! Only Simonds' own S–301 Knives have this finish. And only Simonds' Knives ... made from specially developed steel ... will give you *10% to 15% more cutting between grinds* than you ever got before.

Simonds "Red Streak" S–301 Paper Knives come to you in perfect condition, protectively packed so that the edge actually *floats in air,* as you can see, above. Order from your dealer today.

SIMONDS
SAW AND STEEL CO.

FITCHBURG, MASS.

Other Divisions of SIMONDS SAW AND STEEL CO. making Quality Products for Industry

SIMONDS STEEL MILLS — LOCKPORT, N.Y. — *Special Electric Furnace Steels*

SIMONDS ABRASIVE CO. — PHILADELPHIA, PA. — *Grinding Wheels and Grains*

SIMONDS CANADA SAW CO. LTD. — MONTREAL, TORONTO, VANCOUVER, SAINT JOHN, N.B. — *Simonds Products for Canada*

BRANCH OFFICES: 1350 Columbia Road, Boston 27, Mass.; 127 S. Green St., Chicago 7, Ill.; 416 W. Eighth St., Los Angeles 14, Calif.; 228 First St., San Francisco 5, Calif.; 311 S. W. First Ave., Portand 4, Ore.; 31 W. Trent Ave., Spokane 8, Washington. *Canadian Factory:* 595 St. Remi St., Montreal 30, Que.

Paper Industry Argues For American Standards

(Continued from page 7)

identical work in United States mills. In other parts of Europe the discrepancy is even greater. A typical instance is a Swedish mill making 1610 pounds per hour with a crew of four men, and an American machine making the same grade of paper also operated with four men and producing 1760 pounds per hour. However, the American mill's machine crew receives $5.10 per hour as against $2.02 for the men on the Swedish machine.

"This ratio of labor cost on comparable machines extends throughout the mill, and makes it evident why the United States industry must have adequate duties to compensate for the lower wages paid abroad.

"In the eyes of the paper industry, reciprocity means the exporting of domestic prosperity and the importing of low paid foreign labor. The past history of the paper industry demonstates that this is not theory, but a proven fact."

"About 100,000 tons of Canadian paper mill capacity now making newsprint for American newspapers is being converted to the production of groundwood printing paper."

This was the statement of R. E. Canfield, executive vice-president of the Groundwood Paper Manufacturers Association before the Committee for Reciprocity Information, in opposition to pending proposals which list this grade of paper for a further reduction of the present duty in the forthcoming 18-nation conference to negotiate reciprocal duty reductions.

Instead of a reduction in the present rate he urged that the present rate of one-fifth of 1 cent per pound plus 5 per cent ad valorem be restored at least to the rate of one-fourth of 1 cent per pound and 10 per cent provided by the Tariff Act of 1930.

"The mills which comprise the groundwood Paper Manufacturing Industry," he continued, "are, with two exceptions, survivors of the holocaust let loose on the Paper Industry in 1913 by the removal of duty on Standard Newsprint. In that year there were seventy mills making neswprint in the United States. Today there are only 10 mills making newsprint, and thirty-two of the seventy mills existing in 1913 have ceased to exist.

"Bankruptcies, ghost towns, depressed wages and unemployment have been milestones along the road. As a result of a 40 per cent reduction in duty by the Canadian Trade Agreement of 1938, groundwood imports from Canada alone have increased to a monthly rate 900 per cent above the starting point. In tonnage the total is now 200,000,000 pounds per year.

"The three principal grades of Groundwood papers which can be most easily made by Newsprint mills are Novel, a printing grade known to the trade as B-Publication, and White Pencil Tablet. In 1938 domestic mills made 34,657 tons of Novel, but in 1945 the same mills made only 306 tons. The rest of United States needs came from Canada. In 1938 domestic mills made 7,171 tons of B-Publication, in 1945, 634 tons. In 1938 Domestic mills made 4,371 tons of White Pencil Tablet, in 1945, 72 tons.

"The United States imports more dollars worth of paper and pulp than any other commodity. We import over twice as much paper and pulp as the next highest commodity made in any substantial quantities in the United States.

"The Paper and Pulp Industry has made its contribution to the promotion of international trade in the past and in no uncertain or minor way. To paraphrase a current slogan during the recent elections, we have had more than enough of Reciprocity."

APPENDIX A

STATE	No. of Newsprint mills in 1913	No. of such mills not now existing	No. of such mills making Newsprint only in 1946	No. of such mills making Newsprint and other grades in 1946	No. of such mills making only other grades in 1946
CAL.	1	0	0	0	1
CONN.	1	1	0	0	0
ME.	11	4	3	1	3
MASS.	1	1	0	0	0
MICH.	4	2	0	0	2
MINN.	4	0	0	0	4
N. H.	1	0	0	0	1
N. Y.	27	17	0	0	10
OHIO	1	1	0	0	0
ORE.	2	0	0	2	0
PA.	2	2	0	0	0
VT.	2	2	0	0	0
VA.	1	0	0	0	1
WASH.	1	1	0	0	0
WIS.	11	1	0	0	10
TOTAL	70	32	3	3	32

NOTE: Of five Newsprint mills built in the U. S. since 1913, three new make Newsprint and other grades, and two other grades exclusively.

"Even under the present rates of duty, Canada has developed a tremendous paper making industry and looms as a serious competitor for our domestic market of all uncoated printing papers."

This statement made by George J. Olmstead, Jr., president of the S. D. Warren Company and president of the Book Paper Manufacturers Association in opposing any reduction in the rate of duty on printing paper before the Committee for Reciprocity Information.

"The Canadian pulp and paper industry has experienced an amazing development in the past seventy-five years. Between 1911 and 1921, during which period the tariff on newsprint was removed altogether, the increase in production was from $23,226,479.00 to $151,003,165.00. By 1941 the output reached $334,726,175.00.

"Canada for many years, therefore, has produced pulp and paper far in excess of its domestic requirements. As stated by the Canadian Pulp and Paper Association, 'admittedly the life blood of the Canadian economy is the flow of Canadian exports abroad.' Because of the American market, which prior to World War II absorbed over 80 percent of its pulp and paper exports, the Canadian industry had developed to a point where it had an annual capacity of 4,003,000 tons of groundwood pulp, 4,101,000 tons of chemical pulp, and 4,546,000 tons of paper.

"Of late years the Canadian newsprint industry, and particularly those mills which are at a disadvantage in the production of newsprint as compared with the newer and faster speed mills, have devoted their attention to the production of groundwood printing papers. The point we wish to make is that it is a short step for the Canadian newsprint industry and particularly the lower speed mills to adapt themselves to the manufacture of book papers for export to this country. And the present tariff on uncoated book papers will not deter Canadian manufacturers from doing exactly this thing.

"The pulp and paper industry of Canada is the first industry in that country. We have made it so in large part by removing our duty on newsprint which killed the domestic newsprint industry and translated that industry to Canada.

"What has been said concerning the Canadian situation applies also to Finland, Norway and Sweden. But in our minds the greatest threat, because of geographical location, comes from Canada. We are furnishing the principal market for Canada's export of pulp and paper. It has been furnished so far at the cost of our newsprint industry and a disruption for many years of all the remaining printing and fine paper domestic industries. Surely we cannot wish to go further and by lowering present duties create a strong incentive, if not the absolute necessity, of transplanting the groundwood and book paper industries to Canada."

Gulf States to Expand Lines in New Program

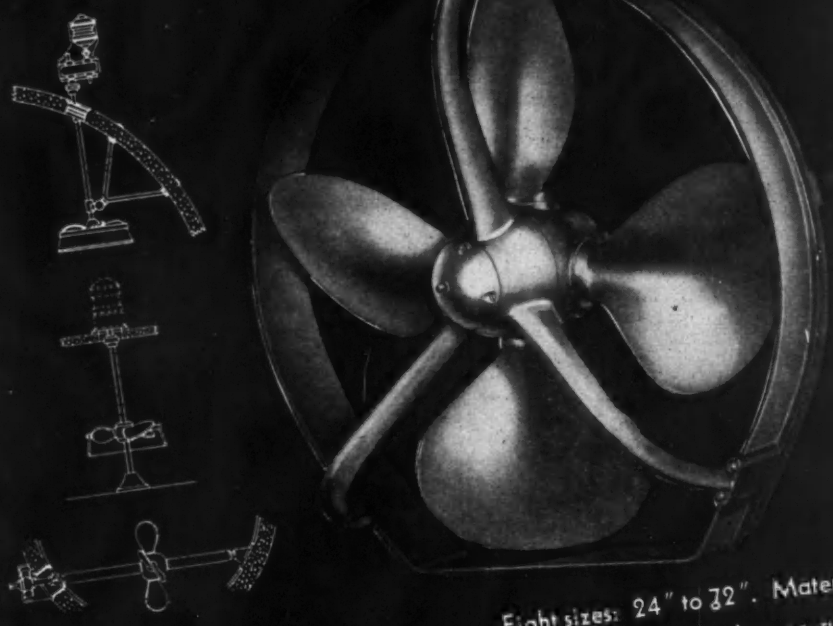
TUSCALOOSA, Ala.—The Gulf States Paper Corporation is planning a $3,000,000 expansion program to increase production of paper by 100 to 150 tons a day.

A company spokesman said the program is designed to diversify the type of products manufactured. It will include installation of new paper machine, pulp production facilities, recover capacity and other auxiliaries for the manufacture of Kraft wrapping paper.

He added that approximately two years will be necessary to complete the construction program which will, when finished, bring about the employment of about 200 additional employes.

IMPCO *Agitators*

for every mill application



PUMPABLE STOCK in horizontal mid-feather type chests can be agitated efficiently and economically with one or more of our channel type, adjustable pitch propeller units.

The propellers can be field-set for any proportion of motor load needed for good agitation; any commercial drive ratios can be used within 10% of preferred propeller speed; propellers can be reset for radically changed operating conditions.

Eight sizes: 24" to 72". Materials: cast iron, bronze, stainless or rubber covered.

For other horizontal and vertical chests there are many possible combinations of agitator elements and drives: open, shrouded and weedless propellers; sweeps and screws; solid and tubular shafts; in single and multiple assemblies.

Write us an outline of your problem. We will submit a proposal for study.

Improved **PAPER MACHINERY CORPORATION**

NASHUA • NEW HAMPSHIRE

West Coast Loggers Study Forest Economy

(Continued from page 10)

"detailed" work to sustain yield than the Government itself, and were paying their own foresters to direct and plant this work. C. D. Orchard, chief forester, B.C. Government; Fred Mulholland, forester, Canadian Western Lumber Company; and Prof. J. E. Liersch, head of the department of forestry, University of British Columbia, also took part in the forum, as did many members of the Association.

Two outstanding addresses dealing with subjects of general interest were those of Gray Turgeon on "Why we need selected immigration" and one by Don Henshaw, Toronto, public relations counsel, Powell River Company. The latter address was recorded and rebroadcast over a New Westminster radio station.

In reviewing the activities of the Association in the past year, Mr. Buck referred to the establishment of trade schools in cooperation with the Department of Veteran's Affairs. Incidentally, the work done personally by Mr. Buck in promotion of these schools to train power saw and other logging equipment operators, was paid tribute by government officials and other speakers.

These classes included instruction in falling and bucking, scaling in the woods and on log booms, saw filing and handling of logging machinery. Results of the courses were declared by Mr. Buck to be more than satisfactory and he said the industry had readily absorbed class graduates. A number of disabled veterans had been engaged in the saw filing classes and had found gainful employment in this field.

Mr. Buck in his presidential review of the year also reported on the success of the plan instituted in cooperation with the British Columbia Fish & Game Association, where a member of an affiliated club received an identification card which when shown to logging operators permitted him to hunt over their lands. In accepting this card club members were made to realize their responsibilities in exercising caution regarding fires in the woods and safe hunting practices. Results of this plan were also reported on with enthusiasm by Rex Hayes, Game Warden at Courtenay, who addressed the convention.

Mr. Buck said considerable publicity had been given by the Federal Government to an announcement that its agency, the Central Housing & Mortgage Corporation, would be empowered to provide mortgage money for the construction of dwellings in logging and mining camps in an attempt to provide veterans housing, and to encourage them and others to seek a livelihood in the woods. To date, Mr. Buck said, nothing tangible has resulted. He said the Association had been endeavoring to cut through the maze of government red tape in an effort to arrive at some streamlined system.

The power-saw has been the saviour of the industry, Mr. Buck asserted, stating that the younger generation of Canadians was not going in for hand labor in the woods. He said continued improvement in power saw equipment and its use had resulted in perfecting of power saw falling and bucking practice, closer cutting and elimination of much heavy labor. Continued expansion of gas and diesel equipment as against the old steam donkey had also resulted in reduction of fire danger and made possible cleaner logging practice. Unemployment insurance was established in the logging industry during the year, Mr. Buck also stated in the course of his review of the industry.

He stated a constant lowering in the production of fir logs due to these stands being cut out was reflected in increased production of hemlock and cedar. Little fir timber was available to purchase by smaller operators, he said, and of necessity a smaller size log was being produced compared to those of former years.

Touching on problems confronting the industry, Mr. Buck asserted the 40 hour week from October to April now instituted by British Columbia labor legislation had not proved satisfactory to either employers or employees in remote logging locations. He claimed inability to employ the leisure time on Saturday did not encourage men to go to the woods. Enlarging on this the president stated it was the accepted history of the industry that a logger went into the woods to make a stake, but he contended both lawmakers and union leaders had ignored this fact. He claimed a logger does not want to go out to a camp and sit around one day a week, thereby making less money than he did in former years. At a time when log production was the key to regaining full lumber production in B. C., Mr. Buck declared the Hours of Work legislation of the provincial government had been and would continue to be, a deterrent to the meeting of housing needs, and the supplying of the foreign export market.

Attention of association members was also directed by retiring President Buck to another new piece of B.C. legislation which requires that each employee who works for one week is entitled to one hour's "holiday" pay. He said the statutes call for payment of one week's holiday with pay for one year's service rendered, which, he said, was readily admitted to be a desirable practice, but Mr. Buck said he could not see why any transient who worked only one week and then moved to another job was entitled to the same relative consideration. He branded the present government regulations to this effect as "only a thinly disguised increase in pay which detracted from the solid principle of rewarding and encouraging steady work."

Constantly rising Workmen's Compensation costs were a source of concern to the industry, continued the retiring president. "While statistics show that the bulk of accidents are due to human failure, Workmen's Compensation Board inspectors concern themselves only with possibility of mechanical failure. Steps that might be considered to improve this serious situation should include: (1) periodic inspection of workmen's personal equipment (boots, gloves, working habits, etc.); (2) lectures on safe practices by W.C.B. inspectors in camps; (3) possible routing of all accidents, obvious and alleged, through competent medical clinics under W.C.B. supervision; (4) possibly the industry should be advised by the W.C.B. of workmen who had bad accident records so that they could be trained in safe practice."

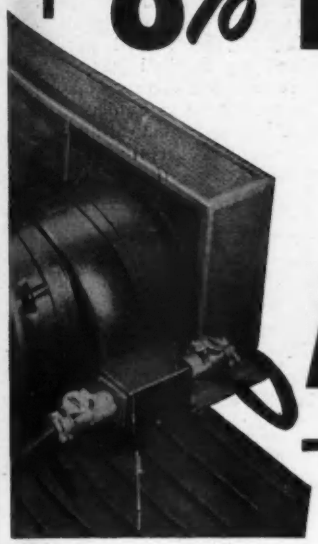
"Only by concentration on personal safety measures by the men can the situation be improved," he continued. "It is felt by some operators that if workmen were made to contribute some percentage of their earnings to the W.C.B. fund they would have a greater appreciation of the benefits of safety first. At present workmen contribute nothing to W.C.B. costs."

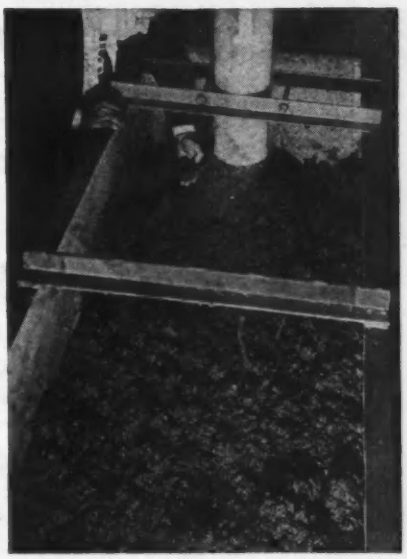
Mr. Buck forecast that greater unit production per man would be necessary to maintain the B.C. position in world markets. He said current operating efficiency is considered to be not more than 70 percent of pre-war. "While more labor has been available, there is and will continue to be a scarcity of experienced key men for some time to come."

In conclusion, Mr. Buck declared, "In spite of continued representations by the industry delay by the Federal tax department in establishing a sound depletion policy on timber is a deterrent to increased log production. Under the present tax laws no provision for the establishment of capital reserves for the opening up of the next stand of timber the logger may move is permitted. As more and more capital is required to open up each succeedingly available tract it would seem good business on the part of the government to bring about a set of tax conditions that would encourage continuous and stable production. The public has not been made to realize that the "cut out and get out" policy loggers are often accused of has been forced due to an inadequate and shortsighted tax policy on the part of the government."

A. P. Allison, C.B.A., Allison Logging Co., was elected to succeed Mr. Buck as president. Clair C. Smith, Smith and Osberg, Cracoft Island and Vancouver, was elected as vice-president. Fred H. Adames, Nanaimo was re-elected as secretary. The Association decided to increase its board of directors from nine to twelve. This board now comprises H. J. Welch, M.L.A., W. L. Keate, Jr., G. E. Wellbrun, J. W. Baikie, W. C. Gibson, C. W. Swanson, G. H. Clarke, F. G. Barwell, R. H. Grant, J. E. Fletcher, Patrick Moloney and Frank Parker.

NOW... Pump 8% Bone-Dry Pulps Without Air Binding!





AIR BINDING DOES NOT LIMIT use of Hi-Density Feeder to 4½ to 5% consistence. Feeder moves up to 8% bone-dry pulps at a continuous, uniform rate . . . reduces need for wet lap production. A 2144

Check THESE DESIGN FEATURES

☐ Simple arrangement permits variable vane pitch settings for handling various products.

☐ Adjustable vane positioning clamps lock vanes securely to shaft.

☐ Counterweight provides balance of complete vane and clamp assembly.

☐ Plastic guide bearing is of split construction . . . allows for replacement without dismantling vane and bearing assembly. Does not require outside source of lubrication.

☐ Complete rotating element mounted on rubber cushioning pads.

Check THESE CONSTRUCTION FEATURES

☐ All feeder parts contacting pulps are made of stainless steel to prevent rust discoloration.

☐ Renewable sleeve, made of special wear-resisting alloy, protects shaft at stuffing box.

☐ Excessive shaft wear prevented by six rings of soft asbestos packing in stuffing box, with seal cage.

☐ Two oversize bearings are of anti-friction type.

☐ Neoprene seals keep dirt and water from bearings.

1847 1947
A CENTURY OF SERVICE to Industry THAT MADE America Great

PREPARATION—Hydraulic Barkers, Chip Screens, Saws, Slashers.

COOKING — Digesters, Blow Tanks, Kilns, Heat Exchangers.

WET ROOM — Vibrating Screens for use as Thickeners, etc.

POWER — Generation, Distribution and Control equipment.

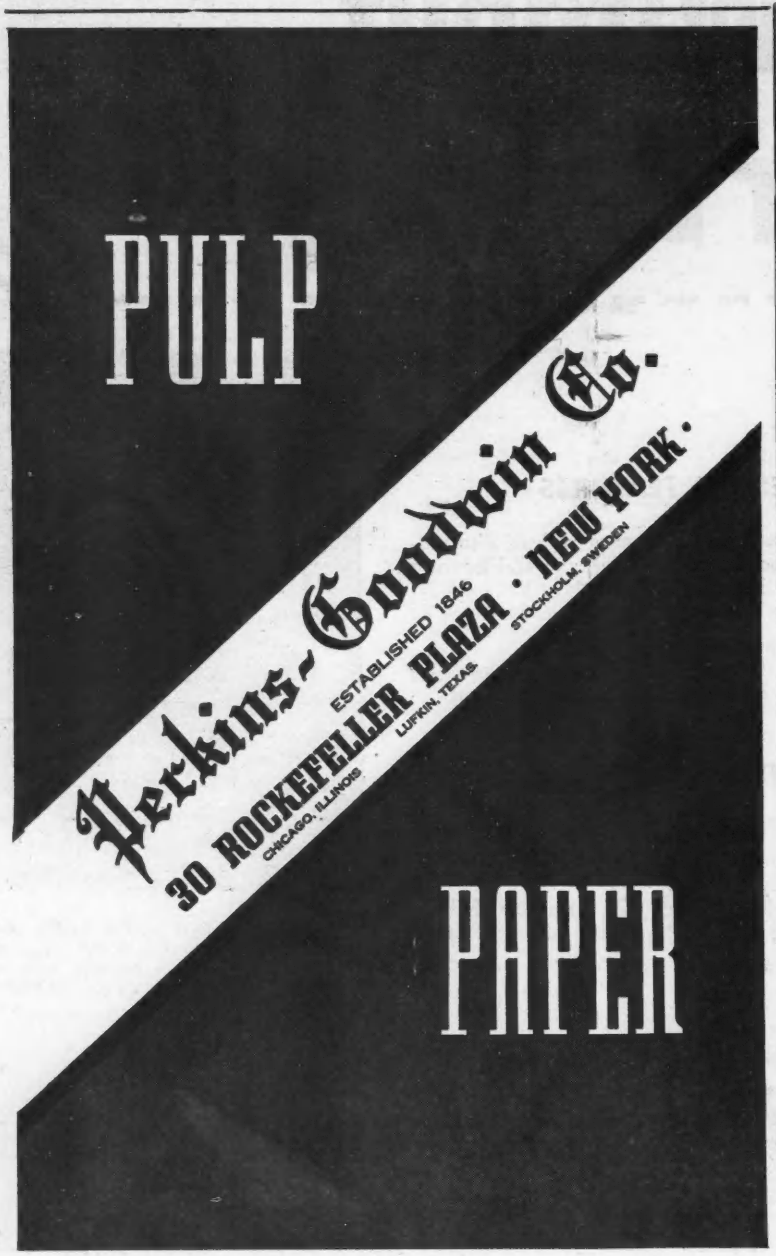
TEXROPE V-belt drives to 5000 hp. Motors — all types a-c and d-c.

PUMPS — Single and Multi-Stage to 150,000 gpm — Stock pumps.

Chicago Hears Experts On Coating Problems

CHICAGO—The Chicago Professional Paper Group meeting at the Chicago Bar Association headquarters on the evening of January 20 brought out two hundred members and guests to hear a most interesting panel discussion stressing the importance in preparing paper surfaces for good printing. The formal presentation made by the speakers covered board preparation, coating equipment, coatings and inks, and was followed by a question and answer period.

The Group was favored with the appearance of an "added starter" in the person of Frank Egan of Frank W. Egan, Incorporated, of Bound Brook, N. J., expert in the operation of coating machines and a widely known consultant on coating equipment itself. Mr. Egan was the third speaker of the four-man panel with John F. Halladay, Industrial Processes Consultant, Elkhart, Ind., as the first guest on the program. Mr. Halladay effectively used lantern slides to depict the first steps in board preparation. He was followed by W. A. Kirkpatrick of Allied Paper Mills of Kalamazoo, Mich., who discussed coatings, while Fred Weymouth, IPI Division of Inter-chemical Corporation of Chicago, followed Mr. Egan's discussion of coating equipment with a most interesting relation of the final procedure in the preparation of paper surfaces for printing—the printing ink,



Luke Johnsos Tells How The Bears Won

Luke Johnsos, scout and assistant coach of the Chicago Bears professional football team and sales representative for the Midland Paper Company, was the star performer at the Monday noon, January 20, meeting of the western division of the Salesmens Association of the Paper Industry, held at the Hotel Sherman. Big Luke had ample assistance in his entertainment efforts in the form of the complete moving picture record of the championship pro football game between the New York Giants and the Chicago Bears. He also evidenced a real sense of humor by indicating that he had "considered" accepting the invitation to appear only if he received a ream of paper from each mill man present—and then decided that was an impossible request!

Mr. Johnsos was secured as the guest speaker and commentator on the movies by Sterling Brown of the Champion Coated Paper Company who was given the pleasant assignment of introducing the speaker by Vice-President Ed Edwards of the Howard Paper Company. Mr. Edwards did, however, retain the gavel long enough to make the presentation speech which gave J. C. Keeney of the Kimberly-Clark Corporation a fifty-dollar war bond for his work as chairman of the golf committee during the past year.

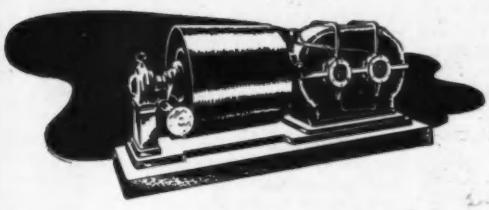
Attendance at the meeting was excellent, the movies were good, Luke Johnsos was in excellent form and the Bears had already won the game even though the winning looked even more impressive in the movies. Thus, everyone was happy—including Luke even though he went away without the reams of paper!

Gould Names Cusack Aldine Vice-President

NEW YORK — Walter T. Cusack, manager of the industrial and technical division of Aldine Paper Company, New York specialty paper concern, has been named vice-president by Harry E. Gould, president. Mr. Cusack is best known in the paper industry for his merchandising of tissue specialties. He was active in pioneering the use of Aldine Paper Company's tea bag papers, called Aldex and Aldrite. He developed for the model airplane industry a domestic covering paper, Silkspan, to take the place of Japanese-made papers. For the photographic trades, he introduced Aldex a now widely-used soft tissue to speed up the operation of drying negatives. He also introduced a new type stencil base tissue that is today a leader in the field. Prior to joining Aldine Paper Company, Mr. Cusack was associated with the Kalamazoo Vegetable Parchment Company, as salesman of food protection papers.

A SIGNATURE

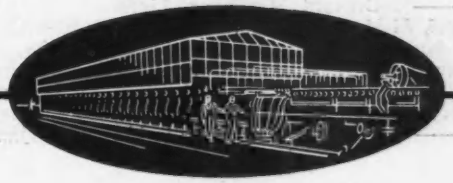
IN STEEL



Every bite of every tool leaves a mark upon its work--like signatures, in steel. Every Bagley & Sewall man knows and writes our signature. Microscopic tolerance--extra care--check and double check. That's why Bagley & Sewall Machines perform so satisfactorily. Seventy-seven years of experience stand behind their modern design. The world's most extensive plant for producing paper machines is back of their creation. If you plan to install paper machinery--check with our engineers.

BAGLEY & SEWALL

WATERTOWN, NEW YORK



IMPORTS

NEW YORK IMPORTS

WEEK ENDING JANUARY 25, 1947

SUMMARY

Newsprint .....3387 rolls
Printing Paper .....69 rolls
Cigarette Paper .....115 casks
Coated Paper .....32 cs.
Wrapping Paper .....5 cs.
Sulphate Paper .....328 rolls
Tracing Cloth .....64 cs.
Wall Paper .....9 bls., 1 cs.
Shelf Paper .....300 rolls
Damask Paper .....4 cs.
Miscellaneous Paper .....3 cs., 1 bl., 104 pkgs.

NEWSPRINT

Montmorency Paper Co., Empire Gangway, St. Johnson, 1030 rolls; 1224 rolls (for Alexandria, Va.).

Madden Reeve Angel & Co., Inc., Svaneholm, Kotka, 1133 rolls.

PRINTING PAPER

Madden Reeve Angel & Co., Inc., Svaneholm, Kotka, 69 rolls.

CIGARETTE PAPER

C. Kolesch, Mormacland, Buenos Aires, 115 casks.

COATED PAPER

F. P. Gaskell Co., Egidia, Glasgow, 32 cs. (for cigarette tipping).

WRAPPING PAPER

Corday Parfums, Inc., Chef Mecanicien Durand, Havre, 5 cs.

SULPHATE PAPER

F. P. Gaskell Co., Elko Victory, Gothenburg, 328 rolls.

TRACING CLOTH

Keuffel & Esser Co., Bernard M. Baker, Liverpool, 23 cs. (bleached cotton).

Keuffel & Esser Co., Ferdinando Gorges, Manchester, 41 cs. (bleached cotton).

WALLPAPER

Hudson Shipping Co., Inc., Ferdinando Gorges, London, 1 cs.

American Express Co., American Scout, Bilbao, 9 bls.

SHELF PAPER

Jay Madden Corp., Svaneholm, Kotka, 300 rolls.

DAMASK PAPER

Jay Madden Corp., Svaneholm, Kotka, 4 cs.

MISCELLANEOUS PAPER

R. F. Downing Co., Chef Mecanicien Durand, Havre, 2 cs.

American Trading Co., Vanderbilt Victory, Shanghai, 1 bl.

Jay Madden Corp., Svaneholm, Kotka, 1 cs., 104 pkgs.

RAGS, BAGGINGS, ETC.

Manufacturers Trust Co., Exminster, Genoa, 76 bls. old bagging.

(———), Bernard M. Baker, Liverpool, 74 bls. new cotton cuttings.

Ledeboer Co., Bernard M. Baker, Liverpool, 60 bls. cotton waste.

E. J. Keller Co., Inc., Catawba Victory, Venice, 98 bls. rags.

(———), Egidia, Glasgow, 91 bls. paperstock.

Cecil Kutz, Bloomington Victory, Natal, 148 bls. cotton waste.

Schimmel Trading Corp., Bloomington Victory, Natal, 35 bls. cotton waste.

American Cotton Products, Bloomington Victory, Natal, 25 bls. cotton waste.

Schimmel Trading Corp., Bloomington Victory, Bahia, 559 bls. cotton waste.

American Cotton Products, Bloomington Victory, Bahia, 141 bls. cotton waste.

New England Waste Co., Bloomington Victory, Bahia, 340 bls. cotton waste.

Brandwein Mazur Co., Marine Leopard, Bombay, 1200 bls. cotton waste.

Schimmel Trading Corp., Marine Leopard, Bombay, 100 bls. cotton waste.

Riverside Mills, Marine Leopard, Bombay, 300 bls. cotton waste.

A. W. Fenton Co., Marine Leopard, Genoa, 119 bls. rags.

Continental Bank Trust Co., Marine Leopard, Genoa, 180 bls. rags.

Padawer Corp., Mount Dewey, Bombay, 100 bls. cotton waste.

Brandwein Mazur Co., Mount Dewey, Bombay, 400 bls. cotton waste.

Lush Cotton Products Co., Mount Dewey, Bombay, 44 bls. cotton waste.

New England Waste Co., Mount Dewey, Bombay, 335 bls. cotton waste.

(———), Ferdinando Gorges, Manchester, 35 bls. cotton waste.

Giesmar Co., Vanderbilt Victory, Shanghai, 224 bls. cotton waste.

New England Waste Co., Vanderbilt Victory, Shanghai, 300 bls. cotton waste.

O'Brien Products Inc., Vanderbilt Victory, Shanghai, 500 bls. cotton waste.

Empire Fibre Co., Vanderbilt Victory, Shanghai, 100 bls. cotton waste.

Kauders Steuber Co., Vanderbilt Victory Shanghai, 10 bls. cotton waste.

Padawer Co., Cape Cumberland, Rio de Janeiro, 96 bls. cotton waste.

The Heyman Co., Cape Cumberland, Rio de Janeiro, 119 bls. cotton waste.

C. Smiles, Bates Victory, Calcutta, 500 bls. old hemp strings and cloth.

W. J. Green & Co., Bates Victory, Calcutta, 258 bls. old hemp net cuttings.

W. Steck & Co., Bates Victory, Calcutta, 65 bls. old hemp net cuttings.

OLD ROPE

(———), Egidia, Glasgow, 38 bls, 18 coils.

GLUESTOCK

John Gorvers, City of Alma, Trujillo City, 292 bdls.

H. Remis, Cape Cumberland, Rio de Janiero, 577 bls.

John Gorvers, Cape Cumberland, Rio de Janiero, 122 bls.

WOODPULP

Montmorency Paper Co., Empire Gangway, St. Johns, 1162 rolls ground wood.

National City Bank, Svaneholm, Kotka, 1826 bls. white mechanically ground woodpulp.

Pulp Sales Corp., Svaneholm, Kotka, 600 bls. prime unbleached sulphite pulp; 200 bls. prime unbleached sulphate pulp.

WOODPULP BOARDS

National City Bank, Svaneholm, Kotka, 194 bls. (paste white), 538 rolls (solid white).

CASEIN

J. H. Schroeder Banking Corp., Mormacland, Buenos Aires, 500 bags (unground rennet casein).

American British Chemical Supplies, Mormacland, Buenos Aires, 1000 bags.

Sheffield Farms Co., Inc., Mormacland, Buenos Aires, 1000 bags.

Casein Co. of America, Division of The Borden Co., Mormacland, Buenos Aires, 4444 bags.

Aralac, Inc., Mormacland, Buenos Aires, 2778 bags.

Casein Co. of America, Division of The Borden Co., Mormacland, Buenos Aires, 2000 bags (ground lactic), 100,000 kilos.

F. H. Paul & Stein Bros., Mormacdawn, Buenos Aires, 2000 bags, 100,000 kilos.

BOSTON IMPORTS

WEEK ENDING JANUARY 25, 1947

Atlantic Gelatine Co., Cornelius Harnett, Rotterdam, 404 bags picker waste.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 25, 1947

The Borregaard Co., Inc., Elko Victory, Gothenburg, 305 bls. chemical pulp.

National City Bank, Svaneholm, Kotka, 1066 bls. white dry mechanically ground woodpulp.

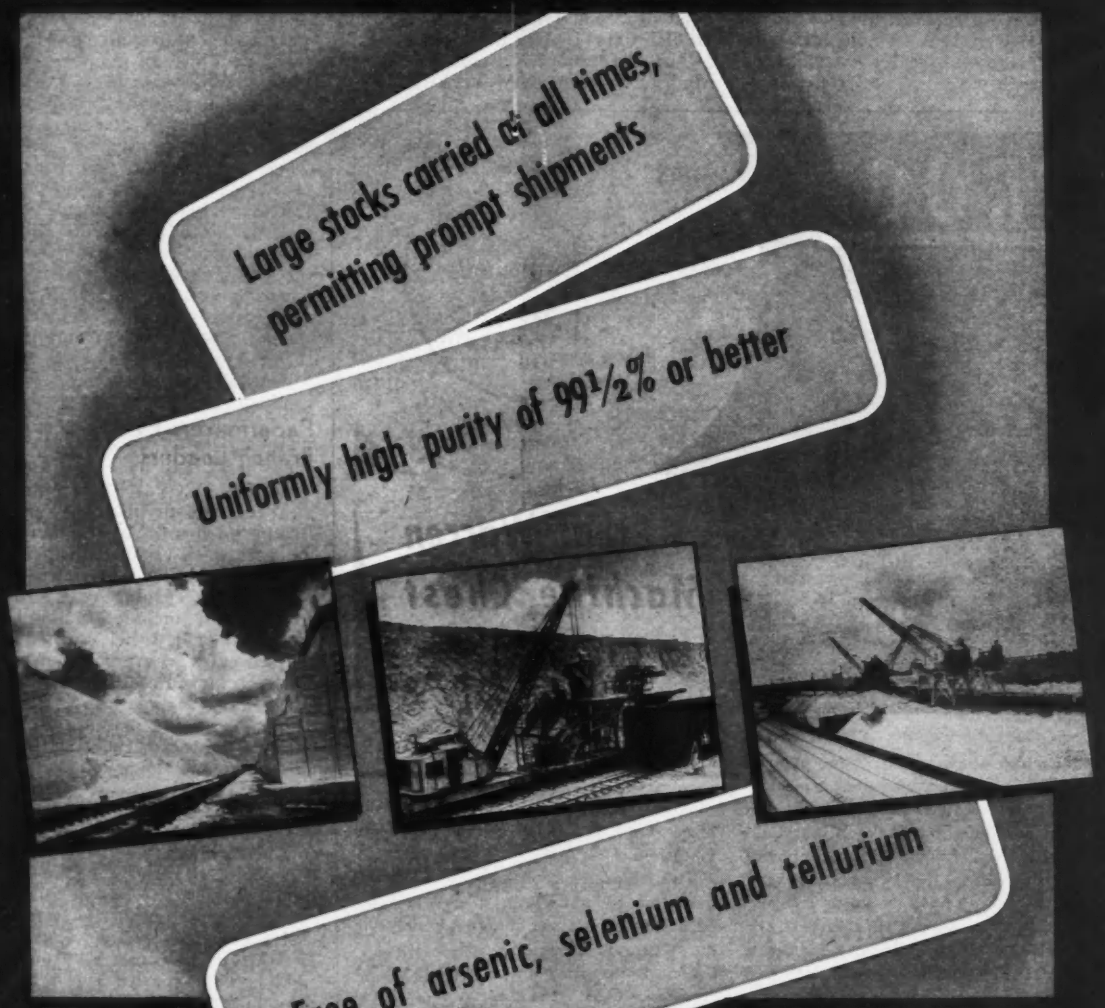
Pulp Sales Corp., Svaneholm, Kotka, 2000 bls. prime unbleached sulphate pulp; 7474 bls. prime unbleached sulphite pulp.

Mitchell Succeeds Cadman At Canadian Pulp & Paper

MONTREAL—The Canadian Pulp and Paper Association has reported the retirement of A. E. Cadman as general manager. Mr. Cadman has served the association for the past twenty-five years in various positions, and was its secretary-manager from 1930 to 1945, and its general manager from 1945 to the present time. Although relinquishing his general management duties, Mr. Cadman will continue, for a time, to serve the association.

The association also made known that F. L. Mitchell, O.B.E., Deputy Coordinator of the Pulp and Paper Administrations of the Wartime Prices and Trade Board, has been appointed manager of the association. Under arrangements between the association and the board, Mr. Mitchell will continue to discharge his duties for the Wartime Prices and Trade Board.

SULPHUR


Large stocks carried at all times, permitting prompt shipments
Uniformly high purity of 99½% or better
Free of arsenic, selenium and tellurium

TEXAS GULF SULPHUR CO.
INC.
75 E. 45th Street New York 17, N.Y.
Mine: Newgulf, Texas

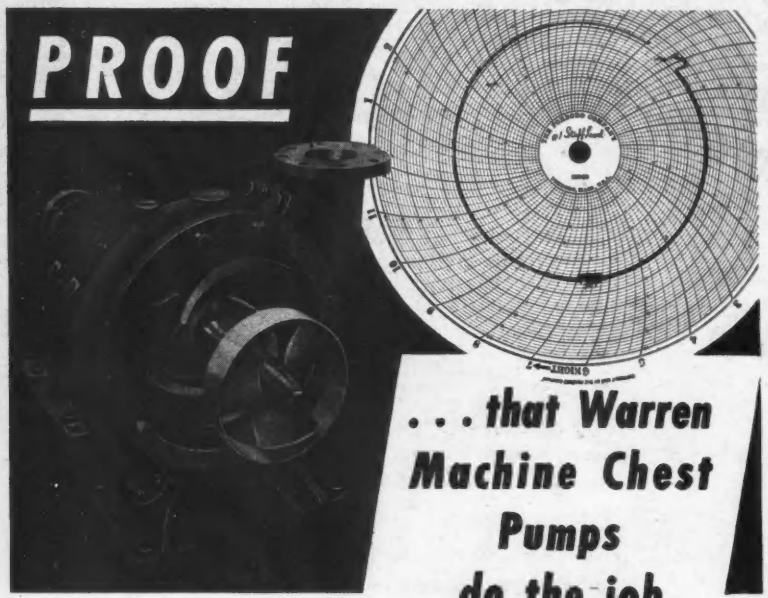
Ancram Mills Reopen At Four-Cent Raise

ANCRAM, N. Y.—The labor controversy at the Ancram Paper Mills, Columbia county, has been settled mainly through the efforts of representatives of the International Brotherhood of Papermakers. Production was resumed this week under terms of an agreement between company officials, John A. Rooney, federal conciliator, and labor organizers. The terms of the new contract signed during the week give the employes an increase of four cents an hour, six paid holidays with pay and a vacation of a week with pay.

The firm, a subsidiary of the Standard Paper Company of New York City, won its point to maintain an open shop. The paper mills have been closed since early in November. The new agreement will expire Dec. 31, 1947, and calls for wages ranging from 72 cents to $1.25 per hour.

Stein Hall Promotes Shoals

NEW YORK—Roger Shoals will take over the management of the liquid glue section of the adhesive department of Stein, Hall & Company, Inc., on February 1. His headquarters will be in the company's offices at 285 Madison Avenue, New York City.



THE chart above, made at the plant of a large paper manufacturer, is positive proof of the constant, uniform delivery of Warren Machine and Jordan Chest Centrifugal Pumps. It shows a 24-hour record of stock level in the regulating box... head in chest varied from 0 to 8 feet, yet practically throughout the entire test, the Warren Machine Chest Pump maintained the regulating box level *constant to a fraction of an inch!*

A Warren Centrifugal Chest Pump gives you these advantages over a plunger-type pump: smooth flow without pulsation; discharge valve can be closed and not build up excessive pressure on pump and discharge line; takes up less floor space and much less head room; no pockets to hold old stock; a diagonally split case makes it unnecessary to remove discharge piping—rotating member can be easily lifted out; no noisy gears to create vibration.

The maintenance charges of a Warren Centrifugal Chest Pump are low as compared with a plunger pump. Renewable liners prevent wear on suction heads—there are no plungers to be turned or replaced. *And in addition, the initial cost of a Warren Centrifugal Chest Pump is lower than that of a plunger pump of much smaller capacity.*

A Warren Centrifugal Machine or Jordan Chest type pump . . . in operation in *your* plant . . . will assure uniform delivery under varying conditions of suction, submergence and density of stock. Write for complete information and list of installations.

Warren Pumps

CENTRIFUGAL *AND* RECIPROCATING PP-43

Warren Steam Pump Company, Inc., Warren, Massachusetts

Marathon Reaches Agreement With Machinists Local

APPLETON, Wis.—A joint declaration issued January 25 by Ambrose C. Baksic, representative of the International Association of Machinists, and Rei Ganzer, wage and salary administrator of Marathon Corporation at Menasha, indicated that a labor agreement between Local 1855 of the Association and the machine division of Marathon had been completed.

The agreement recognizes Local 1855 as the exclusive collective bargaining agent for all employes of the machine division, exclusive of supervisory, sales, engineering, estimating, time-keeping, chief inspectors and clerical employes. It covers customary provisions concerning wages and working conditions and runs for one year.

The machine department, an integral part of Marathon, is not directly associated with the company's manufacture of pulp, paper, paperboard and paper converting activities. It performs highly specialized machine construction and developmental work associated with paper converting and packaging equipment.

Papermakers Elect Branch Leaders

COHOES, N. Y.—A meeting of the local branch of the International Brotherhood of Papermakers during the past week resulted in the selection of Robert McLeod to serve as president for the ensuing year. Other officers chosen include James Garfield, vice-president; Ethel Barnet, recording secretary; Veronica Bowes, financial secretary; Fred Fewkes, treasurer; Charles Bull, John Swasey and Thomas Cahill, trustees. The retiring officers, Harold MacDonald, Merton Crowther and Henry Bertrand were named delegates to the convention of the International Brotherhood of Papermakers to be held in Chicago.

Albert Tracy was re-elected president of the branch of the International Brotherhood of Papermakers, Glenns Falls, at the annual meeting. Other officers elected include Robert Hart, vice-president; Glenn H. Wood, financial secretary; Edward Demers, corresponding secretary.

Wisconsin Water Storage Under Half Capacity

WAUSAU, Wis.—Reservoirs of the Wisconsin Valley Improvement Association on the Wisconsin river were filled only to 44 percent of capacity on Sunday, January 19, after 1,225,000,000 cubic feet of water were used the previous week to maintain the river flow for hydroelectric purposes. The total storage in the reservoirs on January 19 was 7,486,000,000 cubic feet as compared to 11,580,000,000 cubic feet on the same date in 1946, and 3,337,000,000 cubic feet on the same date in 1945.

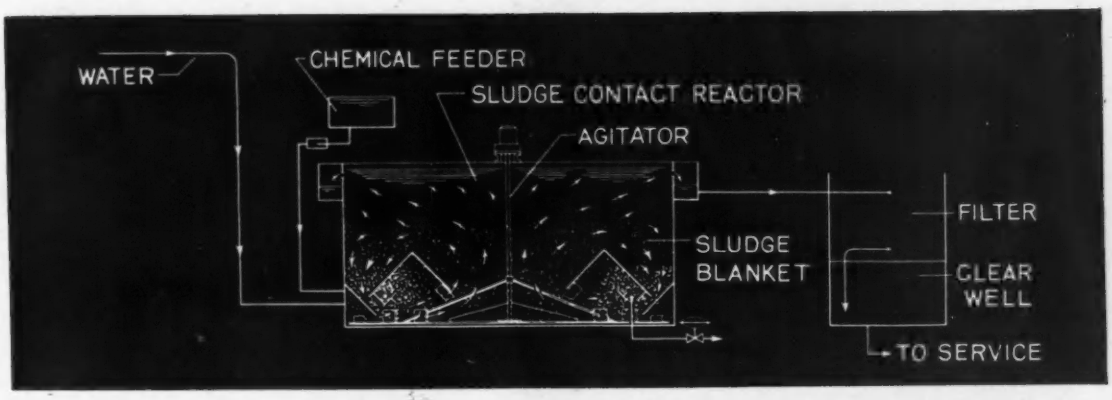
Heavy sediment in water can be removed by settling and filtration. If your raw water supply contains solid impurities of this kind, one of the many types of LIQUON Filters will assure effective clarification.

However, turbidity and color require coagulation for complete removal. With a LIQUON Sludge Contact Reactor . . . the most modern coagulating equipment . . . you can be SURE of the complete clarification of water for your paper-making processes and other needs. The deep sludge bed through which the water passes in this unit thoroughly gathers up the finely divided particles that cause cloudiness and color. Other distinctive features of the unit provide complete separation of the sludge from the water, greatest speed of clarification and greatest economy of space and chemicals.

The LIQUON Sludge Contact Reactor with chemical feeder may be followed by a LIQUON Filter when the turbidity and color in the raw water are high and crystal clear water is required. Coagulation may be further aided by clay feeders and activated silica continuous feeders which save coagulant and assure good coagulation even in winter when alum flocs are likely to be fragile and light.

White water may also be coagulated in the LIQUON Sludge Contact Reactor to recover both the fibre and the water so that they may be re-used, resulting in large economies.

Write for further information on these modern water-clarifying processes and equipment... your request for LIQUON recommendations will involve no obligation.



LIQUID CONDITIONING CORPORATION

114 East Price Street, Linden, N. J.

Engineering Service Representatives in Principal Cities

Liquon

EVERY PROCESS...EVERY TYPE OF EQUIPMENT

for conditioning of water and other liquids

LC-118

TRENDS

Office of the PAPER TRADE JOURNAL, Wednesday, January 29, 1947.

There is little sign of a recession within the pulp and paper industry. All sections of the country say that there is no easing of the demand for paper and board. Jobbers report no improvement in inventories with kraft, toilet tissue, and cartons particularly tight. Nevertheless, reports from Duluth indicate that customers in that area are beginning to show signs of caution in buying at increased prices and are ordering in smaller quantities. Jobbers indicate somewhat the same feeling and are tending to hold off pending an expected improvement in quality. Demand from printers, publishers and converters for groundwood, printing, book and fine papers is running well ahead of production. While no notable decrease in demand for these products is expected neither is any substantial increase in supply indicated in the immediate future. That the situation is not likely to improve much before the third quarter of 1947 is the consensus of a number of manufacturers and distributors in various parts of the country. Advance orders in the hands of printers for catalogs, travel literature, and direct mail advertising insures a continued heavy consumption of these papers for some months to come. Distributors of fine papers are reported to be sold out through the first quarter of 1947. Inventories in the hands of printers and publishers are unknown, but are generally reported to be low. Both converters and publishers claim their production is held up for lack of paper.

The index of general business activity for the week ended January 18 rose to 148.9 from 147.6 in the previous week, compared with 129.1 for the corresponding week in 1946. The index of paperboard production eased to 180.8 from 184.6 in the previous week, compared with 145.3 for the corresponding week in 1946.

Paper production for the week ended January 18 was estimated at 103.8 per cent, compared with 102.6 for the preceding week, with 94.4 for the corresponding week in 1946, with 89.0 for 1945, with 89.2 for 1944, and with 87.9 for the corresponding week in 1943.

Paperboard production for the week ended January 18 was 103.0 per cent of capacity, compared with 102.0 per cent for the preceding week, with 93.0 for the corresponding week in 1946, with 94.0 for 1945, with 95.0 for 1944, and with 88.0 per cent for the corresponding week in 1943.

Continuation of the freight car shortage may be expected but gradual improvement in car supply during 1947 is probable. The number of new cars on order as of last November 1, was double that on January 1, 1946, and the rate at which new cars are being put in service is steadily increasing. There is good reason to expect that the 1946 downward trend in supply of serviceable freight cars will be halted in 1947 and may be reversed. However, the maintenance of a high level of industrial production will require continued maximum utilization of car supply. . . . The supply of motor trucks is expected to be adequate and, in the absence of major strikes, to improve somewhat during 1947. Truck manufacturers are fairly well up to date on deliveries and have no appreciable backlog of unfilled orders. . . . Manufacturers of paper machinery have a backlog of orders amounting, in several instances, to nearly 2 years of production. The demand has so far outrun the production ability that individual manufacturers are refusing to accept additional orders. Current deliveries are 6 months to a year behind schedule owing to strikes in the coal and transportation industries, plus shortages in the supply of certain metals. Perhaps the tightest supply is in electrical equipment necessary for the operation of a paper mill.

Sales of Hinde and Dauch Paper Company of Canada, Ltd., in 1946 set a new record, as did the over-all tonnages in both paper mill and box factory divisions. Earnings were above the $2.01 a common share reported for 1945. In April, 1946, the company was permitted to make its first price increase since 1940, although the rise was largely offset by increased raw materials costs and wage increases and a further rise in materials costs is anticipated. The paperboard and box-making industries in Canada still are under government control. Principal raw materials used by the company, pulps and waste paper stocks, still are in short supply and it is currently necessary to import considerable waste paper at heavy extra cost in order to insure paper mills operating full time. During 1946, Hinde and Dauch completed about half the planned improvement to equipment facilities. When the expansion is completed, a further increase in output of paperboard and boxes will be assured.

Wood Pulp

While pulpwood supplies in northern European countries are expected to be reasonably abundant by spring, there are operating and distribution problems. Coal will undoubtedly remain short for northern European countries and it now appears doubtful whether pulp output over-all can be raised to much more than 60 to 70 percent of capacity in Sweden, Norway and Finland. In the case of Finland particularly, it now appears that Russia may take much larger than prewar quantities while at the same time supplies will be sought by other markets. These include numerous countries which have signed bilateral trade treaties with both Finland and Sweden, with many of such treaties setting a quota on pulp allocations. Production in Norway may be slower in recuperating than in either Sweden or Finland, and demands of the Norwegian paper mills as well as domestic needs for paper may not allow much pulp being made available for export.

Old Rope and Bagging

No change in the old rope market as Manila remains firm at 5.75c per pound and sisal 4.75c with other quotations continuing at prevailing levels.

Bagging continues active with gunny taken up at the $4.50 level per 100 pounds to mills f.o.b. New York. Foreign gunny brings $4.75 to $5.

Rags

Old rags, which form a substantial portion of the component materials of building papers, (the group utilizing nearly 70 percent of the total quantity of rags consumed by the paper and board industry) may be in somewhat better supply this year. Whatever improvement takes place will probably take place in imports, which have increased from an average of 3,585 tons annually in the three years 1943-45, to a total of more than 15,000 tons, based upon figures for the first 10 months of 1946. While import statistics do not segregate old rags, the stated value indicates that the preponderance of imports are in this category.

Waste Paper

Exports of waste amounting, during the first 10 months in 1946, to less than 0.8 percent of total waste paper receipts throughout the country are not expected to be a significant factor generally in the 1947 supply situation, although a moderate increase in exports may be anticipated. Of the 1946 shipments out of the country, about 20 percent were over-issue; the remainder consisting of odd newspapers and all other grades.

Smith Is Promoted; To Stay at Merrill

MERRILL, Wis. — David B. Smith, general manager of the Ward Paper Company, a subsidiary of the Transo Envelope Company, Chicago, has assumed his new duties as executive vice-president and general manager of the parent company, but has announced that for the present he will maintain his residence in this city.

He will continue as general manager of the Merrill plant, where he also is secretary-treasurer.

book-of-the-minute for millions

... another St. Regis Paper product

Probably no other book in America is consulted so often by so many different people as the local telephone directory. To millions of people every day this hard working volume is indeed a book-of-the-minute, for in half-a-minute it gives information that saves countless minutes in business and personal communications.

St. Regis supplies over 50,000 tons of paper a year for the nation's phone books . . . a tonnage that would fill a freight train more than 20 miles long. Almost all the separate editions serving the thousands of communities east of the Rockies are printed on St. Regis Directory paper — exceptionally opaque and light in weight, but able to withstand the roughest handling. From pulp-wood grown on its vast timberlands, St. Regis also produces printing papers for leading national magazines, mail order catalogs, business forms and telegraph blanks and many other large scale needs.

As the variety and volume of requirements have increased, St. Regis has steadily expanded its production and research facilities . . . providing more and better wood cellulose products for the growing needs of business and industry.

ST. REGIS PAPER *Company*

230 PARK AVENUE, NEW YORK 17, N. Y.

St. Regis Products are sold by St. Regis Sales Corporation:
Offices in NEW YORK · CHICAGO · BALTIMORE · SAN FRANCISCO and 20 other industrial centers
IN CANADA: St. Regis Paper Co. (Can.) Ltd., Montreal

In its 40 plants throughout North and South America St. Regis also manufactures: Heavy-duty multiwall paper bags for shipping over 400 products . . . Automatic bag-filling machines . . . "Tacoma" bleached and unbleached sulphate pulp . . . Panelyte — the St. Regis structural laminated plastic.

MARKETS

BLANC FIXE — Raw materials remain tight as demand continues active. Pulp is currently quoted at $40 per ton, in barrels, car lots, at works; the powder is currently quoted at $60 per ton car lots, f.o.b. works.

BLEACHING POWDER—Supplies adequate to meet current demands although there is some delay in current shipments. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—Current prices on processed acid precipitated casein are reported around 46 to 52 cents per pound for both domestic and Argentine grades; f.o.b. shipping point, with quantity not specified at the present time. Supplies are expected to increase in the next few months.

CAUSTIC SODA—Market remains critical with supplies tightest ever. Shipments are behind schedule. Cutback production further reduces stocks. Solid caustic soda is reported at $2.50 per 100 pounds; flaked and ground offered at $2.90 to $3.00 per 100 pounds.

CHINA CLAY — Demand continues heavy with supplies tight. Domestic filler clay is currently $8.50 to $9.00 per ton, car lot. Coating clay is $12 car lot and $16 less car lot. Imported clay is $20 to $22 per ton, car lot, export warehouse; and $45 less car lot, export warehouse for powdered clay.

CHLORINE—Market tight as demand continues to exceed output, stocks low. Lack of tank cars continues to hamper deliveries. Quotations unchanged. Chlorine is currently quoted at $2 to $2.25 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—Gum rosin in drums, per 100 pounds net, in yard New York, car lots, B. D. $8.90; E. F. G. H. I, K, M, $9.60; WG, $9.90; WW, $9.90. Wood Rosin, per 100 pounds, l.c.l., f.o.b. N. Y., B, $6.45; FF, $7.95; G, H, I, $8.75; WW, $8.95. Export demand for gum rosin is particularly strong, forcing prices up.

SALT CAKE—Demand increasing with supplies showing little improvement. Prices remain unchanged. Domostic salf cake is quoted at $15 per ton in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots f.o.b. shipping point.

SODA ASH—Demand active as supplies continue short, previous orders filled. Contract orders for 1947 heavy. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $1.05; in paper bags, $1.20; and in barrels, $1.60.

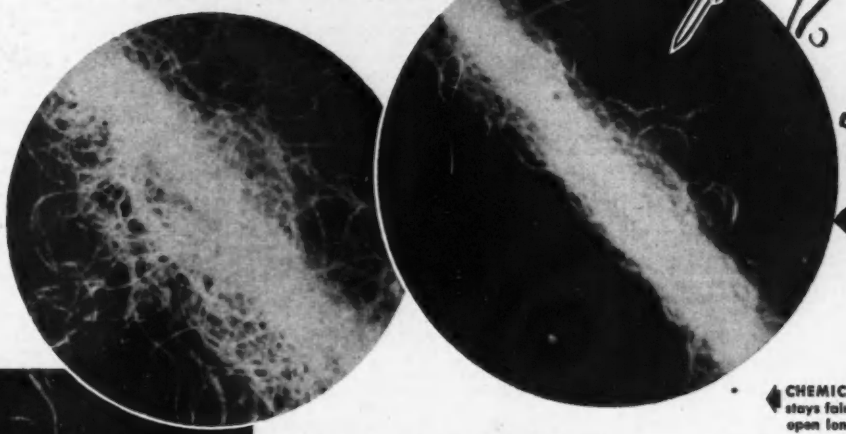
STARCH—Supplies are showing steady improvement. Previous orders filled. Starch prices remain unchanged. The pearl grade is quoted at $3.62 per 100 pounds; powdered starch at $3.73 per 100 pounds; both prices in bags, car lots f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand active, supply fair. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.20 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is currently quoted at $1.75 to $2 per 100 pounds, in bags, at works.

SULPHUR—Strong seasonal demand is reported with stocks plentiful to meet all requirements. Annual contracts are quoted at $16 per long ton, f.o.b. mines; the price f.o.b. at Gulf Ports is $20 per long ton. All prices in car lots.

TALC—Domestic and French grades are moving in fair volume with prices steady. Domestic grades are currently quoted at from $16 to $30 per tons at mines; Canadian at $35 to $45 per ton. All prices in car lots.

WHY ORR-CHEMS WILL SAVE A MILL MONEY



UNTREATED wool yarn tangles and fluffs, which leads to early matting and slower drainage.

CHEMICALLY-TREATED wool yarn stays fairly straight and in a felt stays open longer; hence, better drainage.

SINGLE STRANDS. Left, treated and fairly straight. Right, untreated and badly curled. In a felt the straighter the strands the more open the felt and the better the drainage.

Get the significance of that! In the average mill a 25% felt saving would total thousands—a felt saving of 50% to 100% could mount to tens of thousands of dollars.

Doesn't such a possibility excite your interest and impel you to action? Wouldn't you like to read what scores of superintendents now using Orr-Chem chemically-processed felts have to say?

• *Write the Orr Sales Department or call your Orr representative.*

THE ORR FELT & BLANKET CO.

PIQUA, OHIO

ORR-CHEM CHEMICALLY PROCESSED ORR FELTS

PRICES

With the elimination of price controls on paper, pulp, rags and other materials, the quotations given below once more become indicative of trends in an open market. At the moment they can be of little more, for, while some volume of business still is being done, under contract at the figures given below, fluctuations representing special conditions are too varied and too frequent to permit prices to be given as representing a wholly stabilized market.

Paper

(Delivered New York)

Standard News, per ton—

Roll, contract	$84.00	@	—
Sheets	103.00	@	—

Kraft—per cwt.—Carload Quantities Zone A, Delivered

Superstandard Wrapping	*$5.75	@	$6.00
No. 1 Wrapping	*5.50	"	5.75
Standard Wrapping	*5.25	"	5.50
Standard bag	*5.25	"	5.50

* Prices for Standard Wrapping are for 40 lb. base weight; for Standard Bag for 30 lb. base weight.

Tissues—Per Ream 24x36 (480) 10 lb. Zone 1.

Wh. No. 1 Frd.	1.10	@	1.20
Wh. No. 1 M. G.	1.10	@	1.20
Wh. No. 1½	.95	@	1.10
Wh. No. 2	1.00	@	1.10
Wh. Anti-Tar.	2.25	@	3.50
Kraft Unbl.	1.15	@	1.25
Manila No. 2	.90	@	1.05

Toilet—Per Case of 100 rolls 1 M Sheets.

Unbleached	4.47	@	5.50
Bleached	6.50	"	—

Paper Towels — Per Case of 3750 Zone 1.

Wh. C. fold 11x13¼	4.09	@	—
Br. Sgl. fold 10 in.	2.37	"	2.48
Br. M'tf'd 9½x14¾	2.48	"	—
Br. M'tf'd 9½x9¾	2.37	"	2.48

Manila—per cwt.—C. l. f. a.

No. 1 Jute	11.25	@	—
No. 1 Manila 35 lb.	6.00	"	7.00

Boards, per ton—

News	*70.00	@	75.00
Chip	*67.50	"	73.00
Sgl. Mla. Lt Chip	*80.00	"	89.00
White Pat. Coated	*86.00	"	101.50
Kraft Liners 42 lb.	*84.00	"	100.00
Binders Boards	94.00	"	126.00

Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices, all deliveries in Zone 1:

Rag Content Bonds and Ledgers—White, Assorted Items

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.75	@ $46.75	$40.90	@ $48.00
100% Rag	32.85	" 38.50	34.00	" 40.00
85% Rag	....	"	30.55	" 38.75
75% Rag	24.30	" 28.50	24.45	" 30.00
65% Rag	....	"	....	" ....
50% Rag	20.05	" 24.50	21.25	" 25.75
25% Rag	17.85	" 21.75	19.00	" 23.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items

	Bonds		Ledgers	
No. 1	$12.00	@ $14.50	$13.15	@ $16.00
No. 2	11.25	" 13.75	12.25	" 15.00
No. 3	....	"	....	" ....
No. 4	10.60	" 13.00	11.75	" 14.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper

No. 1 Glossy Coated	$14.70	@	$16.75
No. 2 Glossy Coated	13.75	"	15.50
No. 3 Glossy Coated	13.20	"	16.00
No. 4 Glossy Coated	12.80	"	14.50
No. 1 Antique (Watermarked)	11.25	"	12.75
No. 2 Offset	10.65	"	12.25
A Grade E. F.	10.00	"	12.00
A Grade S. & S. C.	11.00	"	12.50
B Grade E. F.	10.50	"	11.75
B Grade S. C.	10.70	"	12.25
C Grade E. F.	10.00	"	11.50
C Grade S. C.	10.40	"	12.00
D Grade E. F.	9.70	"	11.00
D Grade S. & S. C.	10.10	"	11.50

Ivory & India at $.50 cwt. extra.

Wood Pulp

Domestic mill prices delivered with former OPA freight allowances.

	Per Short ADT		
Groundwood	$75.00	to	—
Unbleached Sulphite	105.00	"	—
Bleached Sulphite	115.00	"	122.50
Bleached Soda	105.00	"	115.00
Unbleached Kraft	102.50	"	—
Southern Kraft	90.00	"	—

Canadian mill prices delivered with freight allowances of $7.50 per ADT; unless otherwise specified:

	Per Short ADT		
Regular Kraft	$102.50	to	—
Select Unbleached Kraft (no freight allowance)	105.00	"	—
Unbleached Sulphite	105.00	"	—
Glassine Unbleached Sulphate (no freight allowance)	90.00	"	—
Bleached Soda	105.00	"	115.00
Groundwood	75.00	"	80.00
Sideruns Pulping News	75.00	"	—
Hardwood and Specialty Grades	Nominal		

Swedish wood pulp prices, per ton of 2,000 lbs. air dry weight on dock usual Atlantic and Gulf ports with an average freight cost of about $7.00 per short ton included. Subject to change as it is said these prices are not satisfactory to Swedish producers:

	Per Short ADT
Bleached Sulphite	$120.00
Bleached Kraft	126.00
Unbleached Sulphite	95.00
Unbleached Kraft	89.00

Finnish quotations f.o.b. shipping point

	Per Short ADT
Bleached Sulphite	$165.00
Unbleached Sulphite	132.50
Unbleached Sulphite (special grade)	137.50
Unbleached Sulphate	132.50
Unbleached Sulphate (special grade)	159.00

Other European countries, at the present time, are not quoting on prompt and forward deliveries of wood pulp, because they have no tonnage available for export.

New Domestic Cotton Cuttings

(Prices delivered Mill Plus Dealer's Commission)

Finnish quotations f.o.b. shipping point

White Shirt	$10.50
Light Silesias	7.50
Unbleached Muslin	11.00
White Back Blue Overalls	8.25
Blue Overalls	7.75
Unbl. Fancy Shirt	4.50
Light Percales	5.50
Light Prints	5.25
Washables	4.00
Bleachable Khaki	5.50
Unbleachable Khaki	5.00
Cottonades	4.50

Old Domestic Cotton Rags

(F.O.B. Shipping Point Plus Dealer's Commission)

	Per 100 lbs.		
No. 1 Whites Repacked	$5.00		
No. 1 Whites Miscellaneous	4.25		
No. 2 Whites Repacked	4.00		
No. 2 Whites Miscellaneous	3.50		
Blue Overalls	3.75		
Thirds and Blues Repacked	3.00		
Thirds and Blues Miscellaneous	2.50		
No. 1 Roofing Rags	1.85		
No. 2 Roofing Rags	1.75		
No. 3 Jute Bagging	1.65		
No. 4 Brussels and hard back carpets	1.65		
No. 5A Roofing Rags	1.65		

New Foreign Cotton Cuttings

(Prices delivered Mill)

	Per 100 lbs.		
New Dark Cuttings	$6.00	to	....
New Mixed Cuttings	6.50	"	....
Light Silesias	9.00	"	10.00
Light Flannelettes	8.00	"	9.00
New White Cuttings	13.00	"	15.00
Fancy Shirt Cuttings	9.00	"	10.00
Light Prints	8.00	"	10.00
Bleachable Khaki, No. 1	7.00	"	7.50
Unbl. Khaki, No. 1	6.25	"	6.75

Old Foreign Rags

(F.O.B. New York)

	Per 100 lbs.		
No. 1 White Linens	$14.00	to	16.00
No. 2 White Linens	12.00	"	13.00
No. 3 White Linens	8.00	"	9.00
No. 4 White Linens	8.00	"	9.00
No. 1 White Cottons	10.00	"	12.00
No. 2 White Cottons	8.00	"	9.00
No. 3 White Cottons	6.50	"	7.00
No. 4 White Cottons	5.00	"	5.50
Extra Light Prints	7.50	"	8.00
No. 1 New Light Prints	6.25	"	6.75
Med. Light Prints	5.25	"	5.75
Dutch Blue Cottons	5.25	"	5.50
Checks and Blues	4.00	"	4.25
Linsey Garments	4.50	"	5.00
Dark Cottons	3.75	"	4.00
Old Shopperies	3.25	"	3.50
New Shopperies	3.25	"	3.50

BAGGING

(Prices to Mill, f.o.b. N. Y.)

	Per 100 lbs.		
Foreign Gunny, No. 1	$4.75	to	5.00
Domestic Gunny, No. 1	4.25	"	4.50
Light Wool Tares	4.50	"	4.75
Heavy Wool Tares	4.75	"	5.00
Bright Bagging	4.25	"	4.50
Foreign Manila Rope	6.00	"	7.00
Domestic Manila Rope	5.75	"	...
Jute Strings	4.50	"	5.00
No. 1 Sisal Strings	4.00	"	4.50
Mixed Strings	1.75	"	...

Waste Paper

Prices to Mills

(Dollars Per Ton)

F.o.b. New York, Baled

No. 1 Hard White Envelope Cuts, one cut	$100.00	@	$110.00
No. 1 Hard White Envelope Cuts	85.00	"	100.00
No. 1 Hard White Shavings, unruled	100.00	"	—
No. 1 Hard White Shavings, ruled	80.00	"	90.00
Soft White Shavings, one cut	85.00	"	90.00
No. 1 Soft White Shavings	75.00	"	80.00
Soft White Shavings, Misc.	65.00	"	—
No. 1 Fly Leaf Shavings	40.00	"	—
No. 2 Fly Leaf Shavings	(nominal)		
No. 1 Groundwood Fly Leaf Shavings	30.00	"	33.00
No. 2 Mixed Groundwood Fly Leaf Shavings	(nominal)		
Mixed Colored Shavings	(nominal)		
Mixed Groundwood Colored Shavings	(nominal)		
Overissue Magazines	(nominal)		
No. 1 Heavy Books & Magazines	38.50	"	—
Mixed Books	22.00	"	25.00
No. 1 White Ledger	50.00	"	52.00
No. 2 Mixed Ledger, colored	40.00	"	45.00
New Manila Envelope Cuttings, one cut	65.00	"	75.00
New Manila Envelope Cuttings	65.00	"	75.00
Extra Manilas	(nominal)		
Mixed Kraft, Env. & Bag Cuttings	70.00	"	—
Kraft Envelope Cuttings	80.00	"	85.00
Triple Sorted, No. 1 Brown Soft Kraft	55.00	"	—
New 100% Kraft Corrugated Cuttings	55.00	"	60.00
No. 1 Assorted Old Kraft	40.00	"	—
New Jute Corrugated Cuttings	27.00	"	—
Old 100% Kraft Corrugated Containers	(nominal)		
Box Board Cuttings	23.00	"	—
White Blank News	45.00	"	—
Overissue News	35.00	"	—
No. 1 News	25.00	"	26.00
No. 1 Mixed Paper	19.00	"	21.00
Old Corrugated	28.00	"	30.00
Mill Wrappers	22.00	"	25.00

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—India	.26	@	.29
Fine Polished—Fine India	.31	"	.35
Unpolished—Paper Makers	.20	"	.26
Tube Rope	.22	"	.27½
Wrapping	.26	"	.33½
Cotton	.70	"	—
(Hard Fiber)			
Mex. Sisal	.21	"	.24
Manila	.33	"	—
(Hemp)			
Polished Hemp	.63	"	—

PHILADELPHIA

Domestic Rags (New)

(F.O.B. Eastern Shipping Point)

Shirt Cuttings—			
New White No. 1	.07¾		
New White No. 2	.05¾		
Light Silesias	.05¾		
Black Silesias, soft	.03¾		
New Unbleached	.07½		
Washable Prints	.04¼		
Washable No. 1	.03		
Blue Overall	.05½		
Cottons—According to grades—			
Washable Shredding	.01¾		
Fancy Percales	.04¾		
New Black Soft	.03¼		
Khaki Cuttings—			
Unbleachable Cotton Cuttings	.03½		
Bleachable Cotton Cuttings	.04½		
Men's Corduroy	.03½		
Ladies' Corduroy	.03		
Cottonades	.03¼		

Domestic Rags (Old)

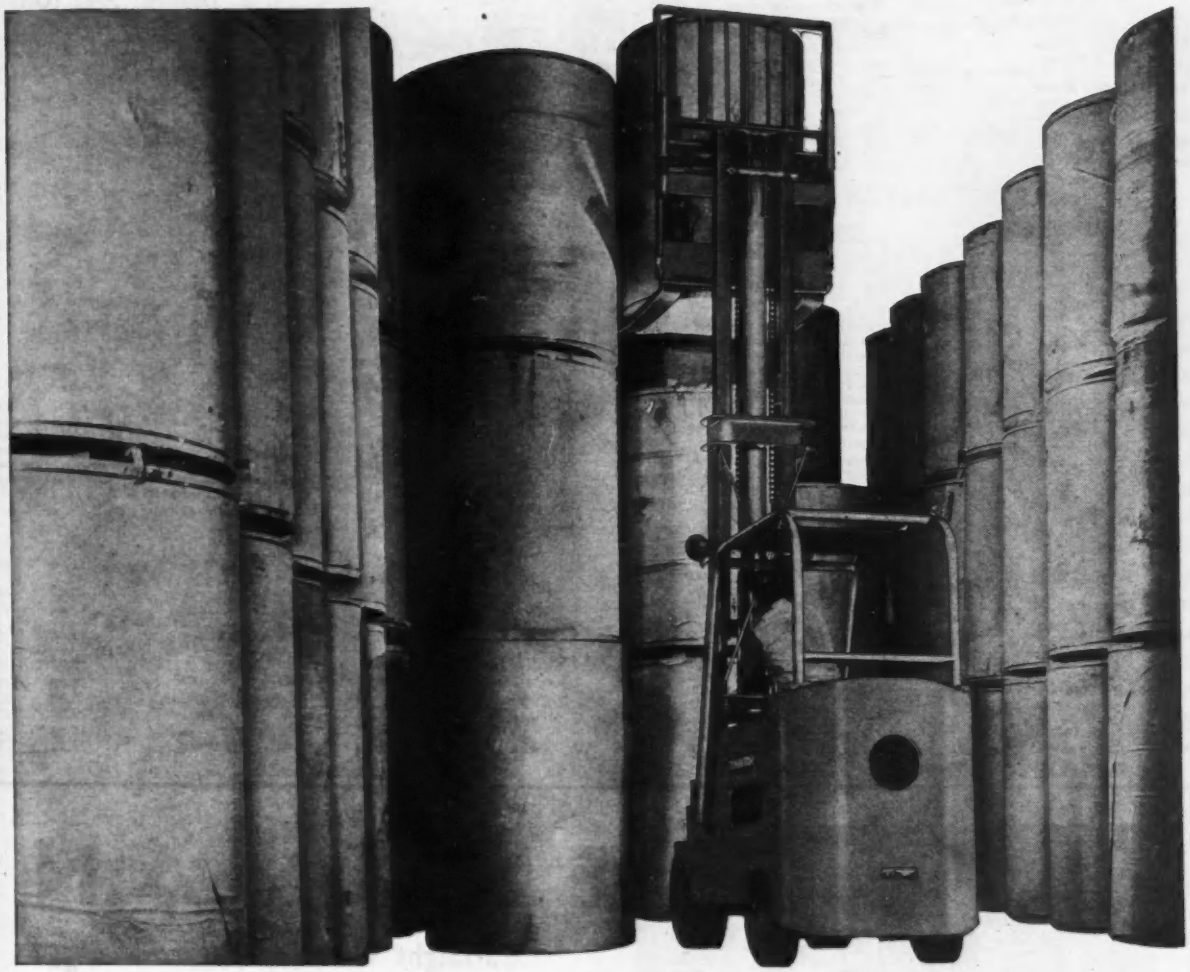
White No. 1—Repacked	3.89	to	4.00
Mixed White	3.50	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—Miscellaneous	1.80	"	2.50
Repacked	2.20	"	—
Roofing Stock—Foreign No. 1	1.85	"	—
Domestic No. 1	1.75	"	—
Domestic No. 2	1.65	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F.O.B. Eastern Shipping Point)

Gunny No. 1—Foreign	Nominal		
Domestic	3.00	to	3.50
No. 1 Clean Bright—Sisal Strings	.04	"	—
No. 2 Clean Bright—Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—No. 1	3.25	"	3.50
No. 2	1.75	"	1.85
Wool Tares, heavy	4.00	"	4.25

There's Plenty of Room in the Balcony!



"Main floor" storage is expensive — especially when overhead storage space is wasted. In many operations, outmoded handling methods prevent full utilization of the existing storage area. In many other operations, Towmotor Fork Lift Trucks have doubled, even tripled, storage capacity through high stacking of materials and products.

Let Towmotor show you how to "pack the house," convert waste space into profitable warehouse space. First Step? Send for a Pocket Catalog describing the complete line of Towmotor Fork Lift Trucks and Accessories.

SEND for special bulletins describing the **TOWMOTOR**

UNLOADER
UPENDER • SCOOP
CRANE ARM
EXTENSION FORKS
EXTENSION BACKREST
RAM • OVERHEAD GUARD

TOWMOTOR CORPORATION
Division 17, 1226 East 152nd St., Cleveland 10, Ohio

TOWMOTOR — THE ONE-MAN BAND — **FORK LIFT TRUCKS *and* TRACTORS**

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b Phila.)

Mill Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	$100.00	@	$115.00
No. 1 Hard White Shavings, unruled.	100.00	"	—
Soft White Shavings, one cut	90.00	"	95.00
White Blank News	45.00	"	50.00
Soft White Shavings, Misc.	65.00	"	70.00
No. 1 White Ledger	52.00	"	55.00
No. 2 Ledger, colored	42.00	"	45.00
No. 1 Heavy Books & Magazines	38.50	"	40.00
Overissue Magazines	nominal		
New Manila Envelope Cuttings	65.00	"	75.00
No. 1 Assorted Old Kraft	40.00	"	—
No. 1 Mixed Paper	19.00	"	21.00
Box Board Cuttings	23.00	"	25.00
Kraft Corrugated Cuttings	nominal		
Old Corrugated	28.00	"	30.00
Overissue News	35.00	"	—
No. 1 News	26.00	"	30.00

BOSTON

Old Papers

(F. o. b. Boston)

Mill Prices, Baled

No. 1 Hard White Shavings, unruled	7.00	@	8.00
No. 1 Hard White Shavings, ruled	7.00	"	8.00
Soft White Shavings, Mis.	6.25	"	6.50
No. 1 Fly Leaf Shavings	1.65	"	1.80
No. 2 Fly Leaf Shavings	2.00	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.75	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	4.25	"	4.50
Groundwood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	3.50	"	—
No. 1 Mixed Paper	—	"	.95
Overissue News	1.25	"	1.35
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	—	"	1.40
Jute Corrugated Cuttings	1.07½	"	—
Paper Strings	2.25	"	2.50

Bagging

(F. o. b. Boston)

Gunny Bagging—Foreign	5.00	@	—
Domestic	5.00	"	5.12½
Sisal Rope No. 1	6.00	"	—
Sisal Rope No. 2	5.50	"	—
Mixed Rope	5.25	"	—
Mixed Strings	2.00	"	2.50
Transmission Rope—Foreign	(nominal)		
Domestic	3.00	"	3.50
Manila Rope—Foreign	(nominal)		
Domestic	6.00	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	6.00	"	—
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—Foreign	(nominal)		
Domestic	5.00	"	5.25
South America	—	"	5.45
Wool Tares—Foreign	4.50	"	—
Domestic	4.50	"	—
Aust. Wool Pouches	5.00	"	5.25
New Zealand Wool Pouches	5.25	"	5.50
New Burlap Cuttings	5.50	"	6.00
Heavy Baling Bagging	5.25	"	5.75
Paper Mill Bagging	3.50	"	3.75
No. 1 Roofing Bagging	1.75	"	—

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—New Light Prints	.06	@	.06¼
Fancy Percales	.04¼	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.09½	"	.10
Canton Flannels, Bleached	.06	"	.06¼
Underwear Cutters, Bleached	.06¼	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¾
New Black Silesias	.03	"	.03¾
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.11½	"	.12
Blue Cheviots	.05½	"	.04
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.06	"	.06¼
Corduroy	.03¼	"	.03¾
New Canvas	.06¼	"	.06¾
B. V. D. Cuttings	.11½	"	.12

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—No. 1	2.00	"	—
No. 2	1.90	"	2.00
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A.	1.35	"	—
Quality B.	1.20	"	—
Quality C.	.95	"	—
Old Manila Rope	6.00	"	—

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

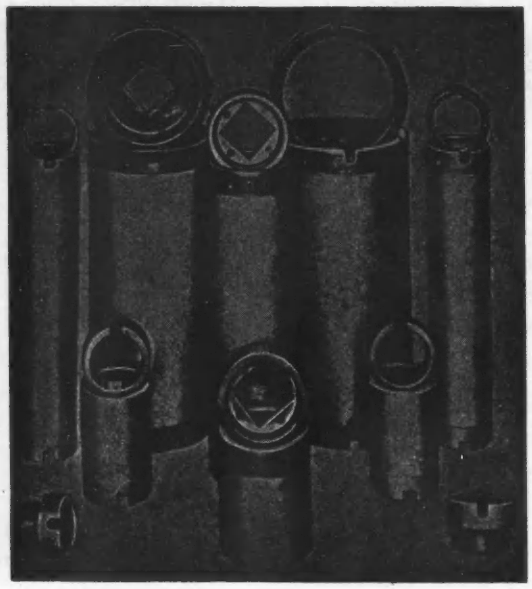
CHICAGO

Waste Paper

(F. o. b. Chicago)

Mill Prices, Baled

Shavings—No. 1 Hard White Envelope Cuts, one cut	$110.00	@	$120.00
No. 1 Hard White Shavings, unruled.	105.00	"	115.00
No. 1 Soft White Shavings	80.00	"	95.00
No. 1 White Ledger	55.00	"	65.00
No. 1 Heavy Books & Magazines	40.00	"	43.00
White Blank News	43.00	"	49.00
Mixed Kraft Env. & Bag Cuttings	75.00	"	85.00
No. 1 Assorted Old Kraft	45.00	"	55.00
Overissue News	38.00	"	42.00
No. 1 News	30.00	"	35.00
No. 1 Mixed Paper	19.00	"	20.00
Old Corrugated	32.00	"	36.00
Mill Wrappers	25.00	"	29.00



ELIXMAN

CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

CORES

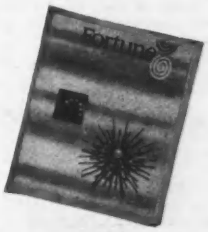
Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.

Here's what they say about paper made with peroxide-bleached groundwood:

"GOOD FOR QUALITY MAGAZINES!"



SAYS FORTUNE: "The character, color and quality of this paper is in keeping with the Fortune standard for its uncoated section."

"GOOD FOR MASS MAGAZINES!"

SAYS FAWCETT: "We find that the paper supplied us by St. Regis Paper Co., made with peroxide-bleached groundwood, has all of the good properties of groundwood. In addition, this paper is bright, white, opaque, resilient, and prints uniformly with little tendency to fuzz or lint."

"GOOD FOR COLOR REPRODUCTION!"

SAYS FAMILY CIRCLE: "Color's especially important to us. That's why we use St. Regis paper made from groundwood bleached with Du Pont Peroxide Bleaching materials. It's reasonable in cost. And, most important, it gives sharp, bright color reproduction as well as black-and-white."

SAYS ST. REGIS: "Based on our successful use of the Du Pont Peroxide Bleaching Process, we are now producing more and more paper made with peroxide-bleached groundwood. We're sold on the tremendous market possibilities for such paper. It has all the good qualities of many more costly types of magazine papers. Papers of the same brightness as other types can be made for less cost, brighter papers can be made for no added cost, and considerably better papers can be produced for slightly higher cost."

Coated and uncoated papers made with peroxide-bleached groundwood are finding many new uses. Du Pont is ready to help you plan a groundwood bleaching process for your mill either by adapting present equipment or by designing a new installation. Write for our booklet or for further details.

E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

DU PONT PEROXIDES

For Groundwood Bleaching

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

"SOLOZONE"
sodium peroxide.

"ALBONE" 35
35% hydrogen peroxide.

OBITUARY

John T. Janson

LAWRENCE, Mass.—John Theodor Janson, 90, noted in the paper manufacturing industry in this country 60 years, died January 18 at his residence, 252 Andover street.

A native of Molndal, Sweden, he was a member of the original group, in the Papyrus Paper Company there, that perfected the sulfide formula in paper making. When he came to this country, 60 years ago, he introduced the system here, and when he retired, in 1936, was vice-president and superintendent of the Merrimac Paper Company.

He leaves his widow, Mrs. Levida Jacobson Janson; a son, John C., of this city, and a daughter, Miss Ebba M. Janson, city editor of the Lacona, N. H., Evening Citizen.

Funeral services were held January 20 with Rev. Oren F. McClure of the Parker Street Methodist Church officiating.

Lyndon B. Tewksbury

BOSTON—Lyndon Blaine Tewksbury, 69, head of Spaulding & Tewksbury, dealers in paper and paper board, died January 17 at his residence, 25 Garrison road, Hingham, Mass. A native of Bangor, Me., he attended Yale University, entering the paper business in 1909. The firm of Spaulding & Tewksbury began business in 1865 in Fort Hill square; later removed to Dewey square, then to 232 Summer street, and subsequently to 222 Summer St., where Mr. Tewksbury was carrying on business at the time of his death.

Funeral services were held January 20 from the First Parish Church.

W. Morton Lincoln, who joined the company in 1925 will conduct the business temporarily.

Elmer S. Johnson

NEW YORK—Elmer S. Johnson, 46, an assistant treasurer of West Virginia Pulp and Paper Company, died last Friday morning at the New Rochelle, N. Y., hospital as the result of a heart ailment. He is survived by the widow, Mrs. Estelle Johnson, his parents, Mr. and Mrs. Bror A. Johnson of New Rochelle, and one brother, Alvin H. Johnson of Mr. Vernon, N. Y.

Mr. Johnson joined the paper company in 1928 as assistant to the treasurer. He was named assistant treasurer in 1932. He was graduated from Columbia University School of Business with the master's degree in 1925. He taught accounting at the Wharton School of Finance, University of Pennsylvania, for three years until joining West Virginia Pulp and Paper Company July 2, 1928.

Harry J. Severance

BUFFALO, N. Y.—Harry J. Severance, 76, former vice president and co-founder of the Hubbs & Howe Company here, died in his home recently after a brief illness.

A native of Hamilton, N. Y., Mr. Severance attended Colgate University and came to Buffalo in 1895. Two years later he and the late William H. Howe organized a local branch of the New York paper company headed by Charles F. Hubbs. Mr. Severance retired in 1932 as a vice president.

He was charter member of Highland Lodge 835, F & A M, and a member of the Buffalo Athletic Club, Buffalo Club, the Greater Buffalo Advertising Club and the Cult of the White Buffalo.

Surviving are two sons, Kendrick J. and Irving N. Severance, and a daughter, Mrs. William W. Stoddart Jr.

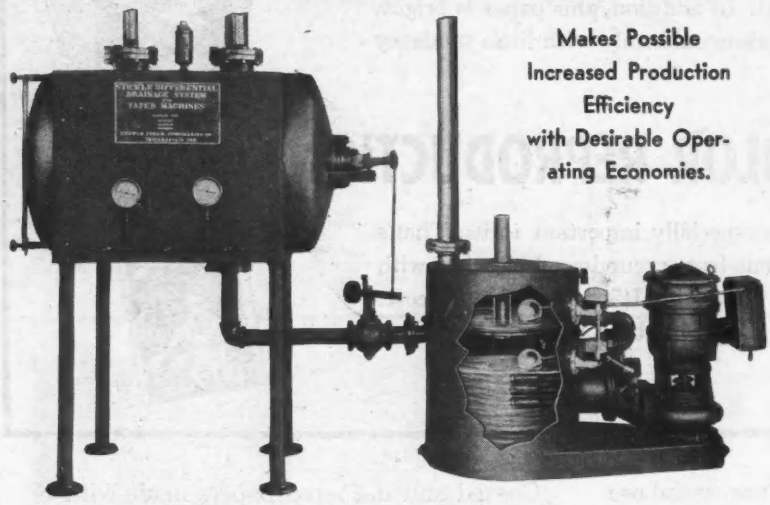
Harry O. Warner

PITTSFIELD, Mass.—Harry O. Warner, 67, for 25 years New England representative of the Eaton Hurlbut Paper company, died suddenly at his home of a heart ailment.

W. Bradford West

PITTSFIELD, Mass. — W. Bradford West, manufacturer's representative for paper-making machinery, has been elected to the board of directors of the Pittsfield National Bank.

New STICKLE *Vacuum*
DIFFERENTIAL DRAINAGE



Makes Possible Increased Production Efficiency with Desirable Operating Economies.

For Paper Machines Operating at Low Pressures

The New Stickle Vacuum Differential Drainage System is designed for paper machines operating at medium to low pressures down to several inches of vacuum. It keeps the dryers free of condensate and air, permitting efficient operation without waste of steam, and with production at high volume. This system eliminates the use of excessive amounts of cooling water or other cooling mediums such as heat exchangers. Required vacuum is automatically maintained and condensate and air are removed at all pressures. Condensate is returned to boiler room at temperature providing an overall fuel saving.

New Stickle Vacuum Differential Drainage automatically maintains the required differential, or drop, in pressure between sections for circulation and for dryer drainage. It also assures accurate modulated temperatures necessary both for quantity and quality production, supplying visible check on drainage of individual dryers and constant information on the surface temperatures of dryers in condensing section. The vacuum pump is an automatic, trouble-free unit, operating on the water-jet principle—simple, efficient, built for long service, without close clearances to wear. This illustration shows Stickle Receiver trap and vacuum pumping unit of the system.

Special Bulletin No. 160-A, supplying more detailed information, will enable paper mill engineers and operating executives more adequately to understand why the New Stickle Vacuum Differential Drainage System is giving satisfaction in mills where it already has been installed. Ask for it.

STICKLE STEAM SPECIALTIES COMPANY
2245 Valley Avenue INDIANAPOLIS 1, INDIANA

WOODPULP AGENTS
PAPER EXPORTERS

ELOF HANSSON, INC.

NEW YORK

220 EAST 42ND STREET

OFFICES:
Gothenburg, London, Sao Paulo,
Buenos Aires, Rio de Janeiro

Looking for a TIME-TESTED, MILL-PROVED WAY to

CONTROL PITCH?

PRECIPITATE ANIMAL GLUE?

DISPERSE PIGMENTS?

Rohm & Haas

TAMOL P

will do the job!

Rohm & Haas TAMOL P has *demonstrated* its value as a dispersing agent for pitch control on sulfite and groundwood pulps. Only 2-3 pounds are needed per ton of pulp. TAMOL P also reduces viscosity, promotes finer dispersion of clay and pigment suspensions, aids in retention of resin and glue size, will not corrode wires.

Other dependable Rohm & Haas Paper Chemicals include: TRITONS, diversified wetting agents; anionic, cationic, non-ionic types. HYDROSULFITES, bleaching agents for groundwood, cotton rags and other pulps. RHOZYMES, stable, dry enzymes for starch conversion, for tub sizing and coating. HYAMINES, potent, non-toxic bactericides and disinfectants. Call or write for detailed information.

Represented in South America by Cia. Rohm y Haas, S.R.L., Carlos Pellegrini 331, Buenos Aires, Argentina and agents in principal South American cities.

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Manufacturers of Chemicals including Plastics • Synthetic Insecticides • Fungicides • Enzymes • Detergents • Germicides • Chemicals for the Leather, Textile, Ceramic, Rubber, Paper, Petroleum and Other Industries.

TRITON, RHOZYME, HYAMINE *and* TAMOL *are trade-mark's Reg. U. S. Pat. Off.*

PITH

Our immediate job is to weld a new framework of human relations on broad and cooperative lines. If we succeed in attaining this goal, we have the overall plant organization, the managerial techniques, the skilled labor force, the raw materials, the technology, and the market to usher in a period of unprecedented and sustained prosperity.—*The National Planning Association.*

Many prices are declining from the peaks reached after OPA controls were dropped last autumn. Sharp declines in butter, poultry, citrus fruits and other foods have turned the news spotlight on the trend. One index of wholesale food prices is down 16 per cent from the October top. Competition and the ageless law of supply and demand are operating in a free market to restore price equilibrium and to remove distortions in price relationships resulting from OPA and other war-imposed controls.—*The Chamber of Commerce of the United States.*

The Swedish government is planning to overhaul the complicated liquor legislation and to examine the legal restrictions on business activities. Special attention will be devoted to the mass of official forms, which take so much time to fill in and consume so much precious paper. Dissatisfaction with the growing bureaucracy has lately become quite articulate, and some newspapers have even been running contests with prizes for the best (or worst) examples of bothersome and interfering official small-mindedness. —*American-Swedish News Exchange.*

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1946		Corresponding Weeks—1945	
December 14	106.7	December 15	99.0
December 21	102.7	December 22	96.5
December 28	71.8	December 29	60.8
January 4, '47	96.3	January 5, '46	89.1
January 11 (Revised)	102.6	January 12	95.3
January 18	*103.8*	January 19	94.4

COMPARATIVE MONTHLY SUMMARIES

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1946	94.7	98.4	104.4	102.7	100.7	104.6	94.0	104.7	101.3	106.4	105.5	97.0	101.1

COMPARATIVE YEARLY SUMMARIES

	1940	1941	1942	1943	1944	1945	1946
Year Average	85.6	97.4	90.4	87.8	88.1	89.7	101.1

PAPERBOARD OPERATING RATIOS†

Current Weeks—1946		Corresponding Weeks—1945	
December 14	102	December 15	98
December 21	102	December 22	92
December 28	66	December 29	52
January 4, '47	85	January 5, '46	75
January 11	102	January 12	94
January 18	103	January 19	93

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1946	90	97	100	99	94	97	89	99	96	100	99	92	96

NOTE: The annual revision of capacity for the paper index shows a capacity increase of 4.6%. The new capacity figures have been used in calculating the production ratio beginning with the week ending January 4, 1947.

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

EDITORIAL

Georgia Weighs Paper Demand

Georgia expects to assume an influential role in the future of paper. Joseph B. Hosmer, industrial economist, has assured its citizens of this possibility. On the basis of a careful study of paper needs and manufacturing requirements undertaken as a part of the research program of the State Engineering Experiment at Georgia Tech, he has found that Georgia and the Southeast "are the logical places" for what will become an increasing demand for an expansion of the paper manufacturing industry.

Mr. Hosmer's study was made public late last week as a special report by Dr. Gerald A. Rosselot, director of the station, under the title "Georgia Opportunities for the Manufacture of More Paper."

Mr. Hosmer pointed to the rapid increase in demand for paper in recent years. He said that whereas United States production of pulpwood in 1920 was 3.8 million tons (less than 500,000 of this produced in the South), the quota for this nation under war conditions rose to about 14 million in 1944, and more than half of this was assigned to the South. He went on to say that there should be a continued high demand for paper, particularly in view of the trend toward better packaging of civilian goods and the urgent needs of newspapers for newsprint.

"The 1946 paper and paperboard production, while record-breaking in its probable total of almost 20,000,000 tons, falls far short of demand," the economist declared. Value of the 1946 national product probably will exceed $185,000,000,000.

As pointed out by the Atlanta Journal, Mr. Hosmer's study indicates the forest resources of Georgia "are sufficient for the finished paper production to be doubled by the addition of three or four new paper operations in South Georgia and two or three in North Georgia. He adds that this can be done "without affecting the expansion of forest utilization in other important directions."

Mr. Hosmer also says that because of rapid strides made in recent years by plywood, it appears likely that the future utilization pattern which would give the greatest overall economic value for Georgia would rank plywood first, pulp products second, naval stores third and lumber fourth.

"It appears reasonable," he asserts, "then, with a continued improvement in forestry practices and a small reduction in lumber production, the plywood production can be increased immediately by two or three times, and the pulpwood supply can be doubled.

"Finished paper and paperboard produced in this State in 1945 totaled about 400,000 tons, and pulp production was 416,205 tons. I believe with improved forestry methods wood can be harvested for production of at least 800,000 tons of paper and that timber for plywood also can be increased.

"It is reasonable to believe," he continued, "that Georgia affords the most certain supply of pulpwood for paper manufacture in the United States unless some factor not included would prevent either the economic harvesting or the operation of pulp and paper mills. Pulp and paper operations in the Southeast appear to be the most profitable in the United States."

Newsprint Scales Tip Northward

In the figures now available covering the relation of Canadian output of newsprint for the year 1946 to the requirements of the United States market, it is indicated that Canadian newsprint covered 78 percent of the entire supply of the United States, while United States mills supplied only 17 percent of the total, and Newfoundland 5 percent. Expressing these percentages in terms of tonnage, it was indicated that during 1946 Canadian mills exported to the United States 3,354,644 tons, while U. S. mills supplied only 753,631 tons and Newfoundland 208,480 tons.

Seventy-eight percent of the total compares with 75 percent supplied by Canadian mills in 1945, 70 percent in 1941, only 62 percent in 1939, 57 percent in 1929, and 15 percent for the year 1913.

In sharp contrast with the Canadian upward sweep, is the steady downward movement of the percentages of United States mills. As against the current 17 percent of the total, in 1945 U. S. mills were able to supply 21 percent; in 1941, 25 percent; in 1939, 27 percent; in 1929, 36 percent—but back in 1913, 85 percent of the total U. S. requirements.

U. S. production for many years past has been on the decline. The main reason for this is that their supply of pulpwood has been diminishing, while there have been available to the Canadian industry a huge, although not inexhaustible, supply of woodpulp, and, as an abundant supply of reasonably cheap hydroelectric power. Hence, the United States publishers have called upon Canadian output for practically the entire increase in newsprint.

Apart from Canada, a relatively small supply, ranging from two to five percent of their requirements, has been purchased from Newfoundland, and an uncertain amount from Europe. The latter supply ran a little over 300,000 tons in 1939, but the war quickly cut off this source, and in 1942 only 1,527 tons came over, with none in the following three years, and only about 9,000 tons during the first 11 months of 1946.

W. L. Cook EDITOR

HYCAR AMERICAN RUBBER LATEX...
a new material for paper impregnation

HYCAR latex, when used as an impregnant for even inexpensive papers, imparts to the papers many desirable properties not readily obtainable with other impregnants.

Tear and wet strength are very considerably increased. Resistance to oils, chemicals, aging, and flexing are added in very desirable degrees. HYCAR-impregnated papers may then be coated with any one of a number of coating materials to impart additional properties.

Potential applications for papers of this sort range from gaskets to leather replacement materials, shelf paper to floor coverings, wallpaper to insoles.

HYCAR latex is very easy to use. No vulcanization is required. Normal drying times are used. And in latex form HYCAR is an inherently safe material to handle. No solvent system is needed even when HYCAR latex is used as a coating material.

We would be glad to work with you on any problems relating to the use of HYCAR latex. For more information, please write Department HJ- 2, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

Hycar
Reg. U.S. Pat. Off.
American Rubber

B. F. Goodrich Chemical Company
A DIVISION OF THE B. F. GOODRICH COMPANY

GEON polyvinyl materials • HYCAR American rubber • KRISTON thermosetting resins • GOOD-RITE brand chemicals

Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY
122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

Forestry Problems in Maine*

By David H. Stevens[1]

Abstract

The forest resources of the State of Maine and the possible damage because of insects are discussed. Estimations are given for the amount of wood by species, the increment of growth, annual cut, and losses caused by insect infestation. The annual drain is given at 311,439,000 cubic feet while the annual growth is only 275,800,000 cubic feet according to the U. S. Forest Service.

Severe loss is to be expected to be caused by the bronze birch borer and there is the possibility of infestation by the spruce bud worm.

Consideration is also given to the problems in forest management imposed by taxation. An overhauling of the tax system will be necessary to create more favorable conditions for forest land ownership.

Because the subject of forestry problems in Maine covers a great deal of ground this discussion is limited to the following problems: (1) Forest resources of the State of Maine, (2) possible damage to the forests of the State of Maine because of the threatening spruce bud worm attack and damage wrought by the bronze birch borer, (3) taxation of forest lands in municipalities of the State, and (4) the property tax in general and its direct bearing on the forests of the State of Maine. Nearly all the material on forest resources was assembled by James W. Sewall, noted consulting forester of Old Town, Maine, whose organization does all the timberland cruising and valuation work in the unorganized territory for the Bureau of Taxation.

The Bureau of Taxation has acquired the best available records, from an over-all standpoint in the state with regard to forest resources. It is to be hoped that U. S. Forest Service will soon be making a more comprehensive survey of forest resources in the northeastern area. There is now being carried on an aerial forest survey of Hancock County, Maine, being sponsored by the Bureau of Taxation, the U. S. Forest Service and the Forestry Department. From the aerial survey, it is hoped to build up a comprehensive study, not only of forest resources in that county, to be used by the Department of Forestry, but also material which will shed more light on the subject of forest land taxation.

Some of the highlights of the Sewall report on forest resources are given. In considering any forestry problem in the State of Maine, it should be remembered that the forests form the state's greatest natural resource. It goes without saying that adequate forest cover has a direct bearing in the matter of climate, contributes to preserving the water supply of the state, employs a vast amount of capital and labor, contributes heavily to the transportation business, yields a reserve money crop to farmers, and attracts an untold number of out-of-state tourists. For these and other reasons, the forest resources must be protected from fire, insects, disease and over-cutting, if future generations of Maine citizens are to enjoy prosperity and a reasonable way of life.

From the best records available, there are 16,200,000 acres of forested land in the state. The non-forested area consists of 2,225,000 acres, recently burned-over land 428,000 acres, water area consists of 947,500 acres.

Nearly one-half of the geographical area of the state is made up of so-called unorganized townships, where there are no local government units and all governmental services are carried on by either some county or state agency. This area is known as the unorganized territory and 8,270,000 acres of the forested area of the state lie within this territory. The remaining forested area consisting of 7,967,000 acres is located in the organized municipalities.

Forest Reserves in Maine

Mr. Sewall, in his comprehensive report, has broken down the forest resources into different classifications and types and established their locations by river areas and gave a breakdown as to the amount of wood contained in the organized municipalities. The total estimates for the larger classifications of wood are as follows: 26,175,000 cords of spruce, 11,687,000 cords of fir, 27,200,000 cords of hardwood pulpwood, and 71,620,000 cords of hardwood fuel wood, 5,000,000 cords of hemlock, and in terms of cords, there is twice as much white pine as hemlock.

The next logical question which might arise is the amount of increase occurring each year in the form of growth or as it is usually referred to, the increment of growth. An analysis of the stand tables compiled for the total forested resources of the State, reveal that there should be an annual increment of growth exclusive of cut of approximately 1,200,000 cords of spruce and fir, 100,000 cords of hemlock, about twice as much growth in the red and white pine as in the hemlock classification, 100,000 cords of poplar and 2,800,000 cords hardwood, pulpwood, and fuelwood. In the hardwood log category and white birch group, because of the severe attack of birch borer, mentioned later, there is no growth but rather a loss. Unfortunately, much of the increment of growth is on the small diametered trees and in stands lacking sufficient density to per-

* Presented at the meeting of the Maine-New Hampshire Section of TAPPI held at Rangeley Lakes, Maine, June 28-29, 1946.
[1] State Assessor, State of Maine, Augusta, Me.

mit timber cutting operations. The amount of the growth is encouraging, however, and the great potentiality of the forests in the State of Maine is something offering a real challenge to this organization and to others interested in wood utilization. The U. S. Forest Service has issued a publication containing a statement that the present rate of growth in the forests of this State could be increased to 2½ times its present productivity in a period of about 40 years.

Growth is, of course, offset by cuts or operating drain, loss through fires, insects, and wind storms. By law, it is mandatory for those persons owning land in the unorganized territory to report annually to the Bureau of Taxation the amount of timber cut on their holdings. Using these data and making estimates based on samples from the timber land in the organized towns, the annual cut for several years ending in 1943 was approximately as follows: Spruce and fir 1,080,000 cords, hemlock 160,000 cords, once again white and red pine about twice the hemlock figure, white birch 175,000 cords, and hardwood 1,225,000 cords. A comparison of the cut figures with those of the increment of growth, disregarding for the time being, loss because of insects, fire, etc., indicate, in the spruce and fir species, the annual cut is slightly less than the increment of growth, or in other words, about 220,000 cords less each year. It should be borne in mind, however, that a great deal of the growth as mentioned above, is taking place in categories not operable, or in other words, cannot be operated at a profit. A few disastrous fires, or a heavy insect infestation which the forests may be subjected to in the not too far distant future could easily change the slight margin from a gain to a loss. If Canadian wood imports were diminished in considerable quantities, the situation would become less favorable. In the hemlock group for 1943, the annual cut exceeded the annual growth by 60,000 cords. Over-cutting seems to be very definite in this species. In the white and red pine group, the two figures are just about equal, but since the Sewall report was made, it would not be unjustified to assume that a loss is being made in this species. The white birch estimate of 2,700,000 cords is probably high in so far as the capital stock in this species is concerned. Terrific losses caused by the bronze birch borer have been sustained during recent years and the annual cut in this specie of 175,000 cords, probably means some loss in the capital stock. Approximate figures in the hardwood pulpwood and fuelwood category, indicate that there is a very wide margin, nearly 1,600,000 cords, between growth and cut. This situation is not as encouraging as it may sound, however, because of the fact that much of the growth as mentioned above is in the unoperable and defective tree groups.

Mr. Sewall's figures for annual growth and annual cut are slightly more optimistic than the figures compiled on a very approximate basis by the U. S. Forest Service. Their work indicates that the forests of Maine are being depleted from all causes, such as operating drain, fire, insects, etc., at an annual rate of 311,439,000 cubic feet while the annual growth is only 275,800,000 cubic feet, so that the annual ratio of loss to cut is 113%. The lesson which might be obtained from Sewall's report would be essentially one of devoting more thought and time to forest resources of the state, with the idea of increasing the margin between the annual depletion and annual growth with the hope that the capital stock of something in the vicinity of 150,000,000 cords of operable and unoperable wood may be increased.

Loss Caused by Insects

The point has been reached where it would be desirable to consider the damage and potential damage to the forests by insects. It may be recalled, in speaking of hardwood logs and white birch, it was noted that a net loss was being sustained each year. This was caused by an insect known as the bronze birch borer boring furrows around the limbs and the trunks of white and yellow birch which has the effect of girdling and thereby killing the trees. Doctor H. B. Peirson, the very able entomologist in the Maine Forestry Department, says that the bronze birch borer has been present in the forests of Maine for a great many years. Unfortunately, forest conditions seem to be such that this insect has really "gone to town" in the past few years. The infestation has apparently become epidemic in size and is progressing into Maine from east to west. In some sections of the central part of the state in 1944, 80% of the birch was killed due to the activity of the borer. Doctor Peirson is attributed to have reported within the past few months that 50% of all birch in the state is now dead and there appears to be no reason to expect that the other 50% will not also die. The only method discovered to date of combating the activities of this insect seems to be forest management. Extensive work by the Bureau of Entomology of the Forestry Department indicates that the borer thrives best in stands of birch containing a high percentage of mature trees. Stands of birch with a high percentage of young growth withstand the attack in a much better manner than the older trees. Once a birch stand has been opened up by cutting of other species of trees, then it is a foregone conclusion the borer will attack and kill all of the birch remaining. This problem is extremely serious because there are literally dozens of small towns in the State of Maine that depend for their only payroll upon a small wood working industry using birch in the making of wood novelties. Many inquiries among officials as to the future of these towns provided the birch wood is lost to these industries, has so far brought forth only a negative shaking of the head. Damage from the bronze birch borer is very real in that it is present now.

Many may recall that this state underwent another infestation from a different insect about the year 1917. This insect was known, and is still known, as the spruce bud worm although it is not correctly named in that it likes balsam fir to feed upon much better than spruce. Damage to the forests as a result of the activity of this insect during those years, was estimated to be up to 30,000,000 cords. Some towns losing as high as 90% of the balsam fir and very large amounts of spruce. Apparently the activity of the insect died out and nearly ceased because of a lack of foliage to feed upon. The softwood forests have made a remarkable comeback during the years following this outbreak and a good deal of the annual increment of growth mentioned has been in the areas most affected during the last spruce bud worm infestation.

This insect now presents another very real threat in that it has already infested vast areas of forest lands in Canada and is spreading westward each year. About one year ago, James W. Sewall, several of the owners of wood land in this state, Raymond E. Rendall, the Forest Commissioner, and others,

took recognition of this trend and through their activities, a considerable amount of money was obtained from the State legislature and from the Congress of the United States to carry on experimental work and studies of the best means of combating this insect. All these agencies, together with the U. S. Forest Service and the Forestry Departments of other states have worked in close cooperation with the government of the Dominion of Canada, but so far, unfortunately, nothing has been found which will definitely stop an infestation by this insect. Infested areas have been found during the past year in the northern New York State and in Vermont. Doctor Peirson of the Forestry Department has special wardens constantly patroling the forested areas of the State of Maine during the summer season searching for the spruce bud worm. This is being done with the thought that an increase in the number of the insects will be the first warning of an infestation in the State of Maine. It is hoped, of course, that the activities of this insect will die out before any infestation occurs in this state, but to date, there seems to be no reason why this should occur. If the infestation should take place in epidemic proportions and reach the size it did in previous years, it could very well mean the loss to this state of a considerable portion of the pulp and paper manufacturing industries because of lack of wood resources.

There are other insects and diseases which are also working in the forests. One of the more important at the present time is the beech scale, which the author understands is rapidly depleting this species of wood. If any are interested in securing the more technical details of the activities of these insects, write to Doctor H. B. Peirson, State House, Augusta, Maine, who will be very happy to give any additional details.

Taxation

For the past several years, there has been considerable doubt in the minds of many in this state in regard to the subject of taxation of forest lands in the organized towns and plantations. Trees are a crop taken from the soil in essentially the same manner as any farm crop with the real difference that most farm crops are an annual proposition, whereas trees often times require 40 years to mature. Management of forest land during the growing period is a hazardous undertaking, financially speaking. If the land owner is fortunate in not sustaining losses from fire or insects, he must cope with the annual tax bill presented to him by the tax collector of the municipalities where his forest land is located. Often times, these municipalities are pinched for taxable valuation to the extent that valuations on real property are out of line and exorbitant.

Wishing to know more about this problem, the State Tax Assessor asked Mr. Sewall to make a study of this subject which he did and produced a very comprehensive and well-written and at the same time, a somewhat startling report. Using actual financial records loaned to him on a confidential basis by land owners, Mr. Sewall assembled information showing the financial income on over one-half million acres of forest land located in organized towns, this income being in the form of stumpage payments. From the same records, there was obtained information as to the annual amount paid in the form of taxes. This study showed that on a basis of 550,000 acres of land under consideration, the average income from stumpage covering in many cases a period of 40 years, was 24c per acre per year and the annual tax per acre per year during the same period was 22c leaving an annual net income per acre for the land owner to pay for management of lands, interest on his investment, and possible losses because of fire and insects infestation of 2c. This study covered a period of sufficient length to take into consideration all phases of stumpage prices and tax variations and the author thinks it can be stated. without any fear of contradiction, that under any system of ownership and taxation which has existed in this state for the past 25 to 40 years, that the owning of forest land in organized towns is not a desirable investment. The answer to this problem in forestry seems to be an overhauling of the tax system as it relates to this phase of taxation.

As a final thought in the matter of forestry problems in the State of Maine, it seems only fitting we should consider why there is a real tax burden in so far as certain of the forests in the state are affected. Fundamentally, government is an agency to render service. There are no doubt many government functions could be performed at perhaps less expense on a private industry basis. Unfortunately because of the many different circumstances which often develop, very active minorities may wish government to take over certain services which ordinarily, at least, in by gone years had been performed by private citizens. A very good illustration of this trend is the present thinking in regard to social welfare. It used to be a matter of pride for the younger generation to see that the older folks did not come to want. The present thinking seems to be that this is a function for government to perform, perhaps leaving the younger generation more opportunity and more resources to enjoy a much faster and maybe more beneficial life.

In any event, whenever government performs a service, it must finance that service and the only method of financing any governmental service is revenue from taxation. In Maine, dependence is placed to a great extent upon the general property tax to finance many governmental services, particularly at the local level. The pulp and paper mills, and the forests from which the wood is obtained and used in those parts, are all subject to the property tax. Any increase in this tax might affect employees through their employers in an adverse manner. For that reason every one should be interested in the problem of taxation and perhaps particularly interested in the taxation of forest lands. There does seem to be, however, a reluctance on the part of many citizens to concern themselves with this very fundamental problem. If one does not obtain any other thought from this discussion on forestry problems in Maine, than it is the author's sincere hope you will be sufficiently aroused, mentally speaking, to take more interest in the amount of taxes demanded by the various governmental units affecting every day life, and to want to know where the money is going and for what it is spent. As a word of warning, it can be said that unless the citizenry of this state concerns itself with the problem, just as sure as the sun rises and sets, government will be called upon to take on additional services and as a result levy additional taxes.

The solution to the first three forestry problems in Maine, namely preserving the forest resources, counteracting the effect of insects and taxation of forest lands in municipalities will be of no avail, unless a satisfactory method can be obtained for fairly and equitably administering the general property tax in the State of Maine.

The Effect of Certain Variables in the Operation of Rotary Vacuum Pulp Washers*

By Maurice Klein[1], F. S. McCall[2] and J. R. Lientz[3]

Abstract

A description of one of the most recent vacuum filter washing installations for sulphate pulp is presented. The unit consists of two lines of three multi-stage washer drums in series, arranged with intermediate repulping equipment to provide a continuous five stage, counter-current washing system for unscreened pulp.

Data are presented which show the relationship between the wash water requirement, expressed as a "Dilution Factor," and the total chemical content of the washed pulp. These data were obtained while the equipment was operating under normal mill conditions and at its rated capacity, by varying the quantity of wash water. The effects of pulp hardness and rate of production with respect to this basic relationship are discussed.

The limitations in efficiency as governed by each mill's particular operating requirements and the desirability of carrying out extensive test work to gain first-hand information are pointed out.

* Presented at the meeting of the Technical Association of the Pulp and Paper Industry held at the Roosevelt Hotel, New Orleans, La., Oct. 14-16, 1946.

[1] Member TAPPI; Chemical Engineer, Union Bag & Paper Corp., Savannah, Ga.

[2] Member TAPPI; Assistant Chief Chemist, Union Bag & Paper Corp., Savannah, Ga.

[3] Member TAPPI; Supt., Technical Service Dept., Union Bag & Paper Corp., Savannah, Ga.

Economical chemical recovery is vital to the successful operation of the sulphate pulping process. Until very recently, good housekeeping and careful operation to minimize leaks and overflows were essentially the only means used to improve the economy of the process. Stack and sewer losses were fixed at high figures. Dust recovery systems now have been developed to such a high degree of efficiency that stack losses may no longer be regarded as a major concern. It follows then, that a mill well equipped in this respect must focus its attention on its pulp washing operations to determine means of further reducing chemical losses. Inasmuch as all the chemicals to be recovered must be separated from the pulp in the washer room, maximum efficiency of operation in this department is of great importance. The increased costs of chemicals and fuels have given impetus to the development of efficient washing equipment and accompanying studies to determine optimum operating conditions.

Installations of modern rotary vacuum pulp washers have several features, such as high efficiency of chemical recovery, continuous operation, ease of control and flexibility which make their use advantageous by comparison with diffusers and wash pans. Present installations of these units in many sulphate mills have already demonstrated their value, by providing

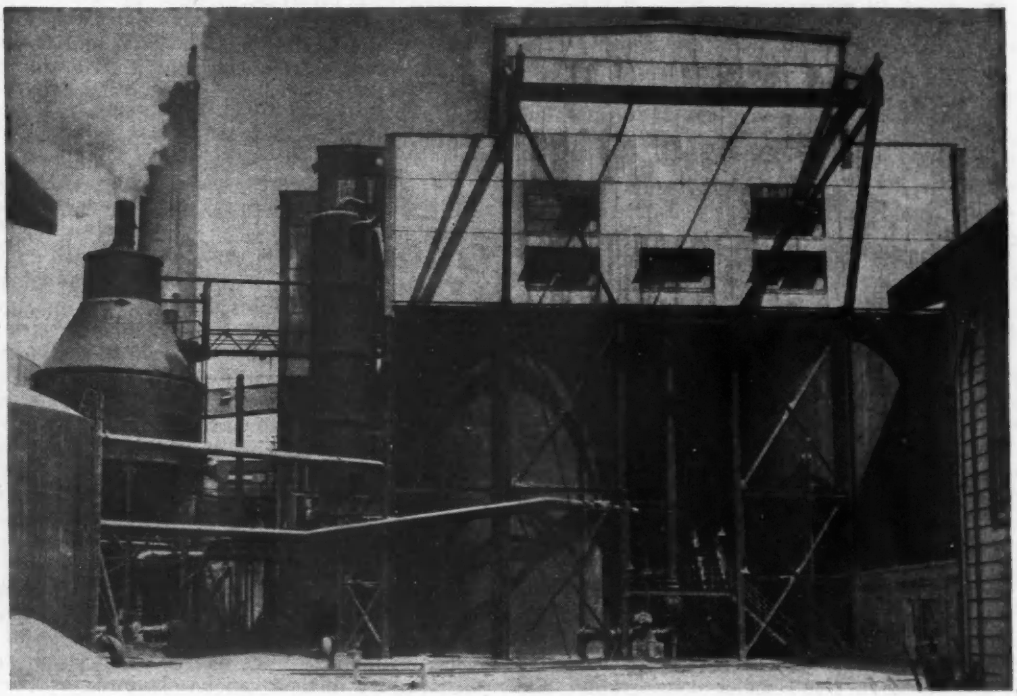


FIG. 1.
Outside View of Washer Building

substantial improvements in chemical recovery and by reducing the evaporation required per pound of black liquor solids recovered. However, the problem of attaining maximum efficiency is continually before us, and there is much to be gained by determining the effect of the many variables involved in the operation of vacuum pulp washers.

Evaluation of performance data from different commercial installations would be of considerable interest; even though such data would not be exactly comparable due to the fact that each mill must operate its equipment in a manner especially adapted to its particular requirements and limitations.

Some of the factors which influence the efficiency of rotary pulp washers are generally known and have been discussed in previous papers on this subject *(1, 2, 3, 4, 5)*. It is the purpose of this paper to present a description of the new pulp washing system at the Savannah Plant of the Union Bag and Paper Corporation and to discuss for this particular installation the effects of varying the quantity of wash water, stock hardness, and rate of production in terms of dilution factor and cleanliness of the washed stock.

The pulp washing system at Savannah is one of the most modern installations. It consists of two lines of three multistage drums in series operating as a five-stage washing system. Five tests were made when washing hard board stock at rated capacity. All conditions were substantially constant throughout the series of runs except that the amount of wash water was varied for each run. Four additional tests were made to obtain information on the effect of decreased stock hardness and increased production.

The test work has indicated that optimum operating conditions may be established for given production rates and pulp hardnesses. If these basic variables are changed, then it is necessary to alter the operating conditions such as water rates, drum speeds, washer valve settings and shower location to obtain maximum efficiency.

The results of the tests to date are summarized as follows:

1. At a TAPPI hardness of 34 and an average production rate of 415 air-dry tons per 24 hours, the total soda content of the washed pulp expressed as sodium sulphate increased from 43 pounds per air-dry ton at a dilution factor of 2.5 to 54 pounds per air-dry ton at a dilution factor of 0.9.

2. It is evident that pulp of a TAPPI hardness of 29 to 31 can be washed to a lower soda content than pulp of TAPPI hardness of 34 for the same dilution factor and production rate. No exact relationship has yet been established.

3. On the basis of a single test there is an indication that the soda content of the washed pulp increases almost directly in proportion to the increase in production rate at a given dilution factor and hardness.

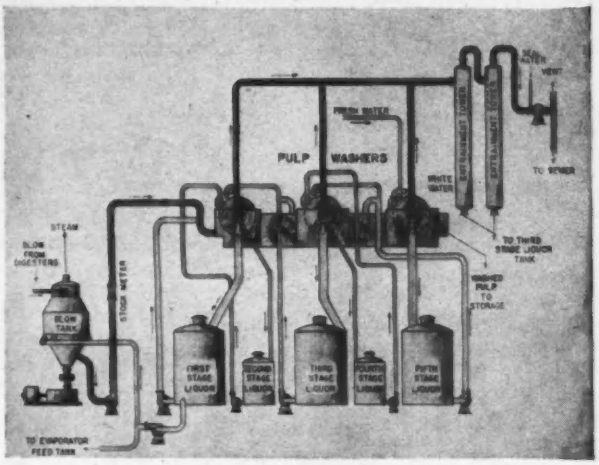


FIG. 2
Flow Sheet of Three Drum Five-Stage Pulp Washing System

Pulp Washing Equipment

The five-stage system was installed to wash pulp of a 32 TAPPI hardness at a rate of 400 tons per day. It has been operating for nearly 6 months at a normal rate of about 415 tons daily on board stock of about 34 TAPPI hardness. No attempt has yet been made to determine the maximum capacity of the system, but it has performed satisfactorily over periods of several days at a rate of 470 tons per day. It is believed that a still higher production can be maintained. The washers are operating as a completely closed system; that is, there are no chem-

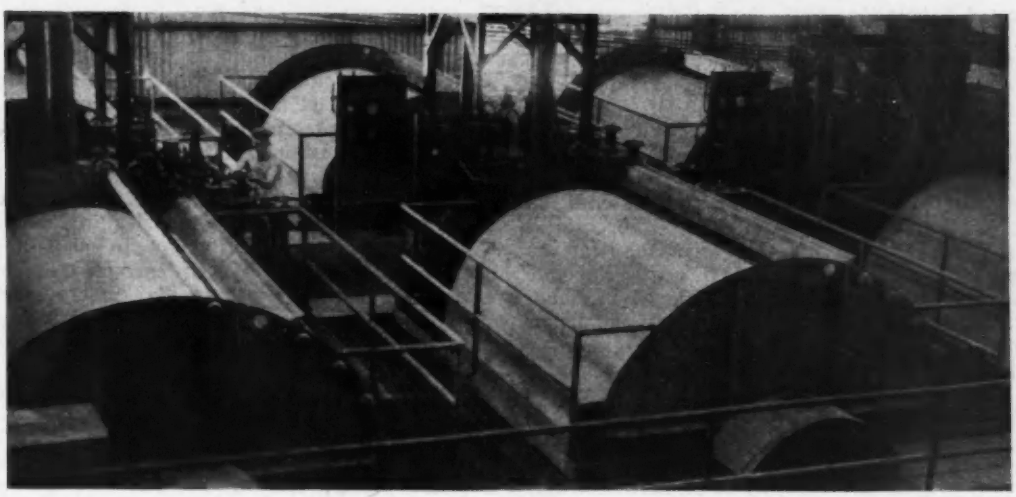


FIG. 3
Inside View Showing Arrangement of Six Washers

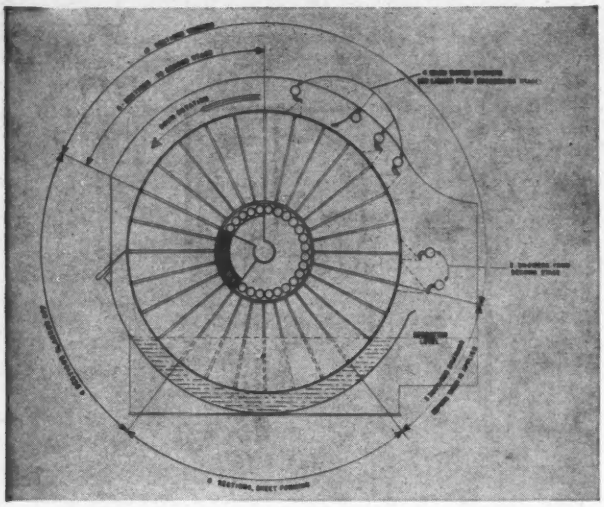


FIG. 4
Operating Cycle on Two-Stage Drum 9 ft. Dia.—28 Sections—12½ in. wide

ical losses except for the soda which leaves with the washed pulp. Figure 1 is an outside view of the washer building showing the blow tank, a stock storage tank, a liquor tank and an entrainment tower. The flows of stock and liquor are shown on the flow diagram of Fig. 2.

The blow tank is of conventional design. The flow of liquor to the conical section at the bottom of the tank is controlled by means of an automatic valve operated from the main instrument panel by a consistency regulator. This instrument maintains a constant power input to the blow tank agitator drive motor. The load on this motor is a function of the blow tank consistency and the instrument operates in such a manner as to add sufficient dilution liquor to maintain a constant motor load. The unit operates the automatic valve directly and the stock is held at approximately 4% consistency. No provisions have yet been made for blow steam heat recovery as there is sufficient hot water available from other sources for all process purposes.

Further dilution occurs as shown in the flow diagram just before the stock is fed to a mixing chamber ahead of the first washer. The flow of stock is regulated to each line of washers by means of a lubricated V-port plug cock. As the stock contains a great many knots, some of which are quite large, the V-port of this plug cock is a distinct advantage. Feed boxes directly behind the first vats were especially designed to separate the large quantity of tramp iron, mainly turpentine cups and nails.

The six 9 × 12 foot two-stage, Swenson-Nyman washer drums can be seen in Fig. 3. The drums are arranged in two lines, each containing three drums in series. The first two drums in each line operate as two stage drums and the third drums operate as single stage drums. The two lines of washers operate as a five stage system using only one set of liquor tanks. The countercurrent flow of stock and liquor has already been indicated on the flow diagram.

It has been mentioned that each drum is a multi-stage unit. This is shown diagrammatically in Fig. 4. By means of this design, two washing cycles can be carried out without rearrangement of the sheet on the drum surface. The first and second drums in each line are each equipped with two set of showers which apply liquor of different concentrations to the pulp mat. Liquor from the top showers, located in the vicinity of the vertical center line of the drum, displaces liquor in the sheet. The displaced liquor drains through a valve shoe into a 6-inch barometric leg and down to the storage tank. From this storage tank it is pumped to the second set of showers located in the vicinity of the horizontal center line on the back side of the drum. More liquor is displaced from the pulp again and drains from the drum section into the discharge head down to storage through a 12-inch barometric leg. These drums operate at a very low submergence; that is, the area of the drum sugmerged in the pulp slurry is very small. It is, therefore, possible to apply the first liquor shower at a point about 30° below the horizontal center line of the washer. This feature combined with the facts that the drums are 9 feet in diameter, operate at a relatively slow speed, and discharge the pulp at the horizontal center line, make it possible to obtain a good separation of the two concentrations of liquors and thus to utilize the two stage feature effectively.

There are repulpers after the first and second drums of each line. These repulpers were designed to give thorough mixing of stock and liquor with a minimum of foaming. Figure 5 shows the essential features of the repulper. The liquor enters the lower chamber where any turbulence is smoothed out. From

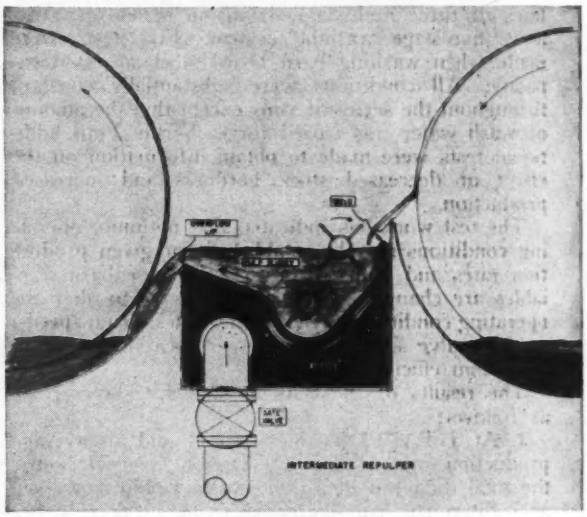


FIG. 5
Intermediate Repulper

this chamber, the liquor flows over the wire and comes in contact with the pulp below the doctor blade. The agitators thoroughly mix the stock and liquor. The mixture at approximately 1.5% consistency then flows over the lip into the vat of the next washer.

The liquor tanks on the second, third, fourth, and fifth stages have sufficient volume to handle the foam produced by the release of entrained air passing down the barometric legs. The first stage liquor tank is vented into a tank which was already in use for the recovery of soap and liquor from the evaporator feed liquor storage.

It will be noted from Fig. 2 that only one vacuum pump is used for the entire washer system. The first, third, and fifth stage barometric legs are connected to the vacuum system. Except for starting up, the vacuum connection is not used on the first stage. There are two entrainment towers in series with the vacuum pump. These towers drain into the

third stage liquor tank. The vacuum pumps are water sealed and the effluent discharges to the sewer.

The washed pulp discharged from the third drum of each line drops through a shredder into a conveyor. This conveyor is arranged so that the pulp can be sent into either of two high density storage tanks. Figure 6 is a diagram of one of the high density pulp storage tanks, each of which was designed to store 50 tons of air-dry pulp at 12% consistency. The stock in the conical section in the bottom of the tank is diluted with decker white water. The flow of white water is automatically controlled in the same manner as the flow of liquor to the blow tank. Stock is pumped from the bottom of the tank directly to the knotter headbox. On the pressure side of the feed valve to the knotter headbox there is a line returning stock to the bottom of the high density storage tank.

The instrumentation of the pulp washing system is unusual because of its completeness. Figure 7 shows the main instrument panel which is flush mounted in the wall at the discharge end of the washers. One distinct advantage of this layout is that the back side of the panel forms part of one wall of the electrical control room and is readily accessible for maintenance work. The main panel contains the following instruments: (1) consistency regulators for blow tank and high density storage tanks; (2) recorders for stock level in blow tank and storage tanks, level in liquor tanks, and submergence of the first drum of each line; (3) recorders for liquor flow to evaporator storage and blow tank and for wash water flow to each line; (4) recorders for temperature of first stage liquor and hot wash water; (5) recorder to measure Baume of first stage liquor; (6) sheet thickness recorders for first drum of each line. In addition, there are small panels conveniently located alongside each drum. These panels indicate the vacuum at each barometric leg, the flow to showers of each stage, the drum submergence, and the sheet thickness for the first drum of each line. One of the small panels is shown in Fig. 8. A venturi stock flow meter is being installed to measure flow of stock from the blow tank to the washers.

The blow tank stock level recorder is very useful in aiding the operators to estimate and control the washer operating rate. The liquor level recorders aid in maintaining the system in balance by indicating when it is necessary to adjust shower flows. The level measuring instrument for the first stage liquor tank is a recorder controller, controlling the level by regulating the flow from the system to the evaporator storage tanks.

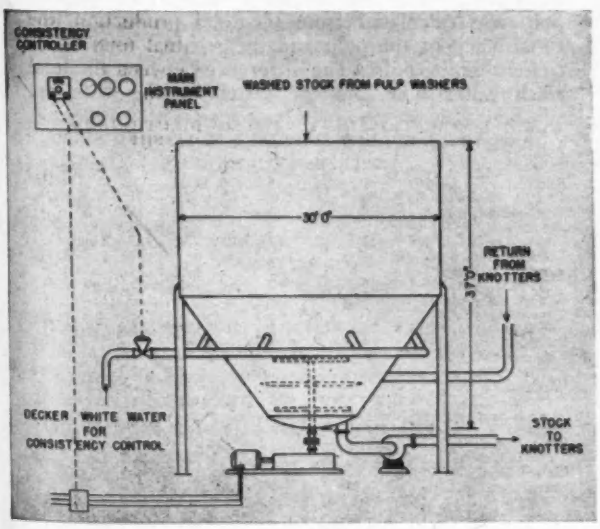


FIG. 6
High Density Pulp Storage Tank

Experimental Work

On the day prior to the taking of data and samples for each test, certain conditions were established. Cooks were scheduled at predetermined intervals to maintain the desired production and the feed of stock to the washers was regulated to take care of the blows at a uniform rate. The wash water flow was set to approximate the desired dilution factor. At least 16 hours were allowed for equilibrium to be established prior to taking data and samples.

It should be emphasized that tests were made when both lines of pulp washers were operating under typical conditions. The range of test conditions was limited as it was necessary to keep the washed pulp clean enough to be used in the paper mill and to provide liquor strong enough for concentration in the evaporators without reducing mill production.

Five 8-hour tests were made on board stock of 33 and 34 TAPPI hardness at production rates of from 412 to 417 tons per day. Three tests were made on stock of 29 to 31 TAPPI hardness. One additional test was made on board stock at a production of 473 tons per day. Data pertaining to these tests have been tabulated in Table I.

Washed pulp, discharging from the third drums, was sampled separately from each line. Four-inch square samples were obtained at three different points across the face of each drum at 30-minute intervals and were composited for 2-hour periods. Each composite then represented a total of twelve individual samples.

Liquor samples were taken from each stage at 1-hour intervals for per cent total solids determinations. These samples were placed in covered containers and allowed to stand to permit entrained air to separate before analysis. In addition, at half hour intervals, data on drum submergence, vacuum at each stage, shower flows and drum speeds were taken. Table II contains a typical set of average data taken during one test run.

Production for the period of the test was calculated by multiplying the number of blows washed during the test period by the current pulp yield per digester.

Following is the procedure used in the determination of the washed pulp consistency and in preparation of the washed pulp samples for total soda determination. This procedure was established to obtain reproducible values of the soda content of the pulp exclusive of the soda in the knots, and consists of obtaining a representative knot free sample small enough to be analyzed for sodium by the TAPPI Uranyl Zinc Acetate Method, T 623 m-44.

1 *Sample Preparation:*

(a) Weigh the can containing composite samples of washed pulp.
(b) Empty entire contents of can into large container and weigh empty can to determine net weight of composite, as received.
(c) Dilute to exactly 16 liters with tap water.
(d) Take 250 ml. samples of tap water at the time of the dilution to serve as blanks. (The complete procedure for total sodium sulphate content is carried out on two or three samples of water taken at the time each set of washed pulp samples is diluted. This is important as the correction for the sodium sulphate content of the water amounts to about 15% of the soda in the washed pulp sample.)
(e) Stir the diluted pulp slurry to a uniform consistency with a large mechanical mixer

II *Determination of Consistency:*

(a) While the dilute pulp slurry is in agitation, remove portion large enough to contain 500 ml. after all knots and shives larger than ⅛ × ⅛ inch have been removed.
(b) Filter the 500 ml. samples through a Buchner funnel using a tared filter paper.
(c) Wash pad of fiber with cold water until filtrate is clear.
(d) Dry pad of fiber at 215° F. and weigh.
(e) Determine consistencies as follows:

(1) Diluted pulp slurry,

$$\frac{\text{Weight of moisture-free pulp} \times 100}{500} = \%\ \text{moisture-free consistency}$$

(2) Washed pulp sample, as received,

$$\frac{\text{Consistency of diluted pulp slurry} \times \text{Total volume of diluted pulp slurry}}{\text{Net weight of washed pulp sample, as received}} = \%\ \text{moisture-free consistency}$$

III *Determination of Sodium Sulphate:*

This procedure calls for dissolving the major portion of the soda in dilute acid and igniting only the small portion of the soda which remains with the fiber. This is done to minimize any error which might occur due to sublimation of soda during the ashing of the fiber.

(a) While dilute pulp slurry is still being agitated, transfer approximately 100 ml. into a tared beaker (two samples should be taken so that determination can be run in duplicate).
(b) Pick out all knots and shives larger than ⅛ × ⅛ inch.
(c) Weigh remainder of sample to 0.1 gram.
(d) Filter sample through a Gooch crucible.
(e) Wash fiber residue slowly with 250 ml. of hot (70 to 80° C.) 1% hydrochloric acid, collecting and mixing filtrate from acid wash with filtrate obtained in (d). (Acid is used to facilitate washing by reducing quantity of water required.)

A *Pulp Residue:*

(a) Slowly char the pulp in the Gooch crucible on a hot plate. Slowly complete the ashing of the carbon by placing the sample in the open door of a muffle furnace taking care not to heat the sample above 1000° F.
(b) Take up ash with 10 to 15 ml. of concentrated hydrochloric acid and wash into above filtrate.

B. *Filtrate:*

(a) Evaporate filtrate to dryness.
(b) Treat residue with 10 to 20 ml. of concentrated hydrochloric acid and again evaporate to dryness. Repeat this treatment twice. Dehydrate any silica present by baking on hot plate or in oven at 100 to 110° C. for 1 hour or longer.
(c) Take up with 10 to 15 ml. of hot water and filter out the dehydrated silica and any other insoluble material. Wash well to remove all soda from filter paper.
(d) Evaporate the filtrate from (c) to approximately 1 to 2 ml.
(e) Determine sodium content by the Uranyl Zinc Acetate Method as described in TAPPI Standard T 623 m-44.
(f) To determine sodium sulphate on the sample of tap water evaporate to 1 to 2 ml. and continue with the Uranyl Zinc Acetate Method.

C. *Calculations:*

(a) The weight of the precipitate multiplied by 0.0462 gives the weight of sodium expressed as sodium sulphate.
(b) Sodium sulphate content of dilute pulp slurry, per ton air-dry pulp =

$$\frac{\text{Weight sodium sulphate} \times 18}{\text{Weight dilute sample} \times \%\ \text{consistency dilute slurry}}$$

(c) Sodium sulphate content of dilution water, per ton air-dry pulp =

$$\frac{\text{(Weight sodium sulphate)}}{\text{(Weight water sampled)}} \times \frac{\text{(100—\% consistency dilute slurry)}}{\text{(\% consistency dilute slurry)}} \times (1800)$$

(d) Net sodium sulphate content of pulp = sodium sulphate content of dilute pulp slurry — sodium sulphate content of dilution water.

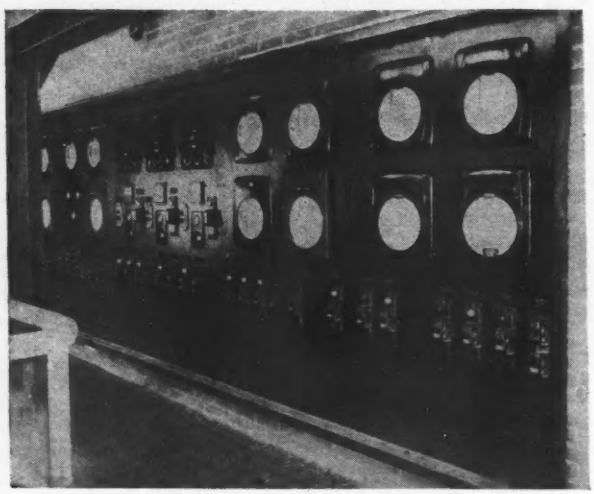


FIG. 7
Main Instrument Panel

Note: This calculation corrects for both soda in wash water at pulp washers and soda in dilution water used at laboratory as both had the same soda content.

Dilution Factor vs. Soda in Washed Pulp

The concepts of "dilution" and "dilution factor," as used in this paper, were discussed very completely by Grieve *(2)* and Lientz *(3)*. The *dilution factor* for a closed pulp washing system is defined as *the quantity of wash water passing through the pulp sheet and into the liquor system per unit of pulp washed.* This factor is commonly expressed in terms of pounds of water per pound of air-dry pulp. That part of the total wash water which passes through the sheet is the only part which dilutes the liquor or which does any washing. The remainder displaces liquor already in the pulp sheet. Therefore, the total soda content of the washed pulp is a direct function of the dilution factor and it is fitting to establish this relationship rather than the relationship between total water and total soda content of the washed pulp.

The dilution factor for each test was determined

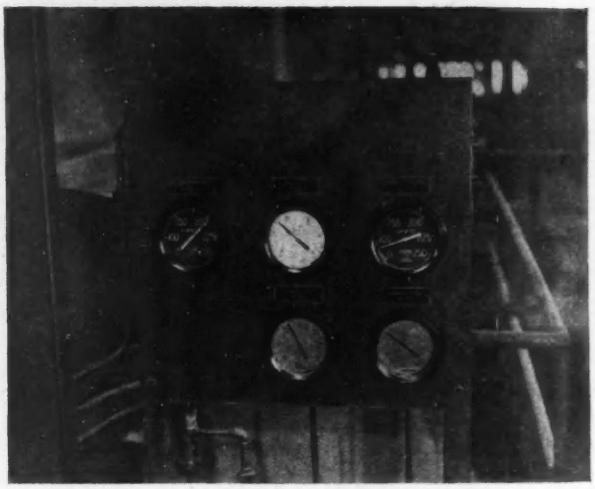


FIG. 8
One of the Panels Which Are Located by Each of the Six Drums

as follows: The total water flow to each line of washers was measured by recording flow meters. The amount of water leaving the system in the washed pulp was calculated from the total production, the consistency of the pulp and the residual total solids content of the pulp. The difference between the total wash water flow and the water leaving with the

TABLE I.—RELATIONSHIP BETWEEN DILUTION FACTOR AND TOTAL SODIUM SULPHATE IN WASHED PULP

EXPERIMENTAL DATA

Run	1	2	3	4	6	11	12	13	21
TAPPI hardness	34	34	34	34	33	29	31	29	34
Test period, hr.	8	8	8	8	8	8	24	4	8
Production, A.D. tons/day	417	417	417	412	412	376	412	411	473
Washed pulp, soda content, lb./A.D. ton	43	45	48	49	54	41	41	46	61
Washed pulp consistency, % moisture-free	14.6	16.0	15.7	14.4	16.0	14.8	16.2	14.7	14.0
Dilution factor, lbs. H_2O/lb. A.D. pulp	2.5	1.7	1.6	1.6	0.9	2.2	1.7	0.7	1.0
Wash water flow, g.p.m.	536	441	442	478	381	460	436	399	513
Wash water temp., °F.	155	159	159	160	160	145	160	152	157
Blow liquor, total solids, %	20.8	20.9	20.8	21.4	21.0	20.2	21.1	20.1	20.4
Liquor from system, total solids, %	16.1	16.3	17.3	16.2	17.9	14.8	16.8	17.0	16.4
Liquor from system, °F.	203	205	207	204	206	206	203	206	206
Consistency from blow tank, % moisture-free	3.8	4.3	4.3	4.0	3.5	...	4.1	3.9	3.5

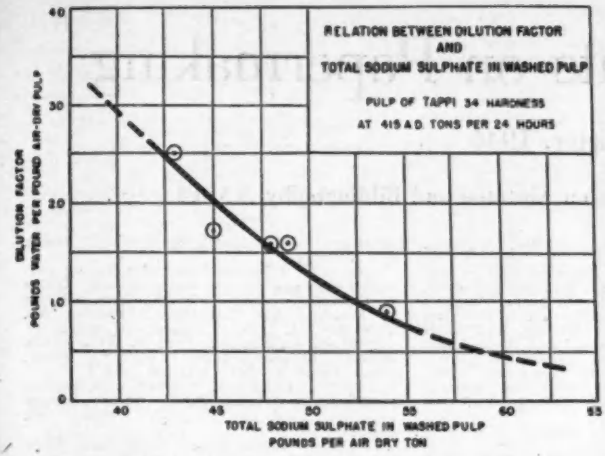

RELATION BETWEEN DILUTION FACTOR
AND
TOTAL SODIUM SULPHATE IN WASHED PULP
PULP OF TAPPI 34 HARDNESS
AT 415 A.D. TONS PER 24 HOURS
DILUTION FACTOR
POUNDS WATER PER POUND AIR-DRY PULP
TOTAL SODIUM SULPHATE IN WASHED PULP
POUNDS PER AIR DRY TON

FIG. 9

Total Sodium Sulphate in Washed Pulp, Pounds Per Air Dry Ton

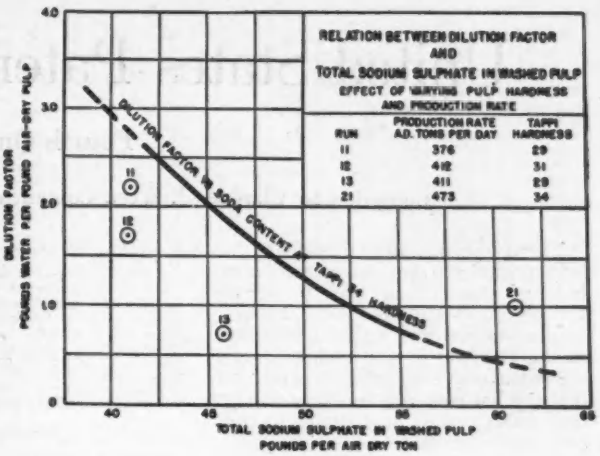

RELATION BETWEEN DILUTION FACTOR
AND
TOTAL SODIUM SULPHATE IN WASHED PULP
EFFECT OF VARYING PULP HARDNESS
AND PRODUCTION RATE
RUN
PRODUCTION RATE A.D. TONS PER DAY
TAPPI HARDNESS
11 376 29
12 412 31
13 411 29
21 473 34
DILUTION FACTOR IN SODA CONTENT AT TAPPI 34 HARDNESS
DILUTION FACTOR
POUNDS WATER PER POUND AIR-DRY PULP
TOTAL SODIUM SULPHATE IN WASHED PULP
POUNDS PER AIR DRY TON

FIG. 10

Total Sodium Sulphate in Washed Pulp, Pounds Per Air Dry Ton

washed pulp was the total dilution for the test period. The dilution factor was determined by dividing the total dilution by the total pounds of air-dry pulp washed during the same period. The factor was expressed in terms of pounds of dilution per pound of air-dry pulp. The following sample calculation illustrates the method used:

(1) Pulp production = 17.4 air-dry tons/hour
(2) Washed pulp consistency = 15.7% moisture-free
(3) Soda in washed pulp = 48 pounds Na_2SO_4/air-dry ton
(4) Total wash water = 442 g.p.m.

Production = $17.4 \times 1800 = 31{,}300$ pounds moisture-free pulp/hour
$17.4 \times 2000 = 34{,}800$ pounds air-dry pulp/hour

$$\frac{31{,}300}{.157} = 199{,}400 \text{ pounds/hour (wet pulp)}$$

Total solids in washed pulp = $48 \times 1.74 \times 17.4 = 1400$
(Factor 1.74 is ratio of total black liquor solids to total sodium sulphate content).
Total liquor in washed pulp = 199,400 — 31,300 = 168,100 lb./hour
Total water in washed pulp = 168,100 — 1400 = 166,700 lb./hour
Total wash water applied = $442 \times 500 = 221{,}000$ lb./hour
Dilution = 221,000 — 166,700 = 54,300 pounds/hour

$$\text{Dilution factor} = \frac{54{,}300}{34{,}800} = 1.6 \text{ pounds water/pound air-dry pulp}$$

Figure 9 shows the basic relationship obtained between the dilution factor and the total sodium sulphate content of the washed pulp. This curve was developed from a series of five tests on board stock at a TAPPI hardness of 34 and an average production rate of 415 tons of air-dry pulp daily and represents the actual range of conditions which might be experienced in daily operation. The primary purpose of establishing this relationship was to determine the water flow which would ultimately lead to the most economical operation. The principal factors to be considered are the cost of evaporation,

TABLE II.—TYPICAL OPERATING DATA—RUN 3

	Temperature, °F.	% Total Solids
Blow liquor	...	20.8
First stage liquor	207	17.3
Second stage liquor	199	15.3
Third stage liquor	184	7.2
Fourth stage liquor	182	6.5
Fifth stage liquor	169	3.0
	Flow to Showers, g.p.m.	**Vacuum Readings, inches of mercury**
First stage	256	3.9
Second stage	462	4.0
Third stage	624	8.0
Fourth stage	418	6.0
Fifth stage	442	10.6
	Drum Speed, r.p.m.	**Drum Submergence, feet**
First drum	1.68	2.0
Second drum	1.94	1.8
Third drum	1.78	1.8

Production: $\frac{16 \text{ Blows}}{8 \text{ Hours}} \times 8.69 \text{ tons/blow} = 17.4 \text{ tons/hour} = 417 \text{ tons/day}$

cost of chemicals, and cost of subsequent treatment in the stock preparation system. The optimum point will be different for each installation and each type of pulp. The establishment of this curve now makes it possible to study the effect of minor variables such as capacity, hardness, wash water temperature, drum speed, drum submergence, shower location and method of application, valve settings, vacuum variations, etc. A complete study of all these variables should develop the optimum operating conditions for the entire system.

At the present time paper stock is handled on the washing system for a short period each month. It was therefore desirable to determine the effect of a reduction of hardness on the position of the curve in Fig. 9. Three tests have been completed to date and the results of these show that at the same capacity and dilution factor, a lower total soda content is obtained when washing the softer stock. Figure 10 shows the position of the points determined with respect to the original curve.

Also included in Fig. 10 is a point obtained at a capacity approximately 15% higher than that used for determination of the base curve. The ever pressing problem of increasing production makes it desirable to have such information available concerning the effects of added load. More experimental tests at these higher rates will also be necessary.

Summary

To date, the work on the pulp washing system at the Savannah plant of the Union Bag and Paper Corporation has consisted of placing the equipment in acceptable operation and establishing a basic relationship between the dilution factor and total soda loss from the system. Preliminary information concerning the effect of water requirement, hardness variations, and production have been obtained. Considerably more test work will be required before the effect of all variables can be determined and optimum operating conditions can be established.

Literature Cited

1. Fuhrmeister, C., *Paper Mill* 60, No. 28: 11-13, 19 (July 10, 1937).
2. Grieve, J. R. W., *Pulp Paper Mag. Canada* 46, No. 8: 601-605 (July, 1945).
3. Lientz, J. R., *Paper Ind.* 28, No. 6: 806-809 (Sept., 1946).
4. Morrison, H. A., *Paper Mill* 60, No. 50: 15, 17 (Dec. 11, 1937); *Tech. Assoc. Papers* 21: 446-448 (June, 1938).
5. Noble, J. H., and Rich, J. P., *Tech. Assoc. Papers* 26: 257-258 (June, 1943); *Paper Trade J.* 117, No. 20: 35-36 (T. S. 219-220) (Nov. 11, 1943).

United States Patents on Papermaking

Fourth Quarter, 1946

Compiled by Clarence J. West, Committee on Abstracts and Bibliography, TAPPI

The following list of patents has been compiled from the current numbers of the Official Gazette of the United States Patents Office. Because as a rule, only one claim is published in the Gazette, it is not claimed that the list is complete; also, it is possible that the list may contain some patents that do not apply specifically to pulp and paper manufacture.

Copies of any of the following patents may be obtained from the United States Patent Office, Washington, D. C., by sending twenty-five cents for each patent desired. The change in price of individual patents from ten to twenty-five cents became effective July 5, 1946.

October 1, 1946

2,408,422. Method of preparing and applying a patch for a Fourdrinier wire. Jesse A. Harris, assignor to Crown Zellerbach Corporation, San Francisco, Calif. Filed Oct. 29, 1943. 1 claim. (Cl. 140-3). Details are given of the preparation of a piece of woven wire fabric of finer mesh than the Fourdrinier wire to be patched and of the method of applying this patch to the Fourdrinier wire.

2,408,488. Method of perforating gypsum lath. Louis N. Sorensen, assignor to The Celotex Corporation, Chicago, Ill. Filed Aug. 27, 1941. 9 claims. (Cl. 164-125). A method of perforating plaster board having a partially set cementitious core with adhered surfacing sheets, using a plurality of annular knives to cut through the board and receive the plugs cut therefrom.

2,408,498. Apparatus for cooling and hardening wax carbon coatings. Nelson S. Welk, assignor to The McBee Company, Athens, Ohio. Filed April 24, 1944. 1 claim. (Cl. 101-416). In connection with a printing and a cooling cylinder for printing wax carbon on sheets, a plurality of nozzles arranged to direct air jets onto the cooling cylinder.

2,408,504. Means for coating webs. Samuel Bergstein, Cincinnati, Ohio, assignor to Robert Morris Bergstein and Frank David Bergstein as trustees. Filed Sept. 14, 1944. 14 claims. (Cl. 91-53). The coating material is introduced onto the web so as to dam up against the doctor blade and the amount applied to the web is adjusted by angular adjustment of the blade to the tangential path of travel of the blade

2,408,606. Siphon mechanism for heated rolls. Hobart W. Bruker, assignor to George W. Swift, Jr., Inc., Bordentown, N. J. Filed April 14, 1945. 5 claims. (Cl. 138-38). The siphon mechanism comprises an elongated exhaust conduit member with supporting portions at each end and also an exhaust passageway therein leading out through one end portion.

2,408,616. Packaging. Elmer E. Eldredge, Plymouth, Wis., assignor to Kraft Foods Company. Filed Nov. 24, 1941. 1 claim. (Cl. 206-56). A shipping package comprises a plurality of relatively independent, substantially like package units.

October 8, 1946

2,408,734. Molded fiber edge forming apparatus. Merle P. Chaplin, South Portland, Maine. Filed Sept. 13, 1944. 12 claims. (Cl. 92-56).

2,408,849. Cellulose purification. Clifford I. Haney, Mervin E. Martin, and Troy M. Andrews, assignors to Celanese Corporation of America, New York, N. Y. Filed March 12, 1943. 2 claims. (Cl. 8-105). Sulphite pulp at a consistency of 8% is treated with 7% aqueous sodium hydroxide at 90° to 103° for 1 hour; this is followed by 2% aqueous chlorine for 30 minutes; the treatment is repeated at 50° to 60°, using less concentrated solutions of alkali and chlorine; the pulp is then bleached with aqueous hydrochloride containing 0.5% available chlorine and finally treated with 7% sodium hydroxide at 75° to 103°.

2,409,047. Paperboard coin box. Clarence F. Klein, assignor to Frankenberg Bros., Inc., Columbus, Ohio. Filed June 20, 1945. 3 Claims. (Cl. 229-8.5). A normally closed coin-receiving box.

2,409,100. Bag structure and process of manufacture. Charles V. Brady and Russell J. Williams, assignors to Bemis Bro. Bag Company, St. Louis, Mo. Filed Nov. 1, 1943. 6 claims. (Cl. 93-35).

2,409,137. Process of separating tall oil into fractions by treatment with levulinic acid ester. Kermit D. Longley, assignor to Quaker Chemical Products Corp., Conshohocken, Pa. Filed Dec. 26, 1944. 2 claims. (Cl. 260-97.5). Tall oil is mixed with a liquid ester of levulinic acid and allowed to stand at room temperature until a waxy solid precipitates; the supernatant liquid, cooled substantially below room temp., gives a precipitate consisting largely of fatty acids.

October 15, 1946

2,409,258. Asphalt adhesive. Lewis Davis and Armand I. Gauthier, assignors to McLaurin-Jones Co., Brookfield, Mass. Filed Aug. 24, 1943. 3 claims. (Cl. 106-277). The adhesive consists of 20 parts asphalt emulsion (about 50% solids) and 3 to 6 parts Burgundy pitch (dispersed in water).

2,409,314. Bag with insoluble automatic fold closing. Adolf Rambold, Dresden, Germany; vested in the Alien Property Custodian. Filed May 3, 1940. 2 claims. (Cl. 229-53). An open bag with polygonal cross section.

2,409,453. Jordan engine lining. Harold D. Stuck and William W. Bolton, assignors to John W. Bolton & Sons, Inc., Lawrence, Mass. Filed July 5, 1941. 4 claims. (Cl. 92-27).

2,409,460. Manufacture of containers. Harry F. Waters, New York, N. Y. Filed Nov. 12, 1941. 2 claims. (Cl. 93-55.1). A process for securing a closure to a container.

2,409,524. Method of straining fibrous suspensions. Sten Eskil Einarsson Ahlfors, Hedemora, Sweden. Filed Jan. 30, 1942. 4 claims. (Cl. 92-33). The pulp is supplied to the bottom surface of a strainer element and caused to pass upward while the element is subjected to a vibratory motion of 1200 to 1400 vibrations per minute.

2,409,562. Paper parachute. Dana B. Hastings, assignor to Dennison Manufacturing Company, Framingham, Mass. Filed Dec. 4, 1943. 5 claims. (Cl. 244-145).

2,409,564. Transfer material. William Heinecke and Frieda Heinecke, assignors to The Di-Noc Manufacturing Company, Cleveland, Ohio. Filed May 28, 1941. 7 claims. (Cl. 95-8). A composite transfer sheet consists of successive layers of paper, ethylcellulose, a photosensitive layer, and a vinyl resin.

October 22, 1946

2,409,614. Refining sulfate turpentine. Robert A. Collins, assignor to Hercules Powder Company, Wilmington, Del. Filed Jan. 15, 1942. 8 claims. (Cl. 260-675.5). The turpentine is heated between 60° and 156° C. for 2 to 20 hours while air is passed through the product.

2,409,621. Method of closing bag tube ends. William J. Geimer and Frank R. Linda, assignors to Bemis Bro. Bag Co., Minneapolis, Minn. Filed July 27, 1942. 6 claims. (Cl. 93-35). A method of closing and sealing the open top of a bag of the intucked type.

2,409.628. Manufacture of coated board. Clark C. Heritage, assignor to Wood Conversion Company, Cloquet, Minn. Filed Sept. 9, 1939. 16 claims. (Cl. 92-40). A wet mat of vegetable fibers is coated with a composition having sufficient pigment to hide the surface fibers and an aqueous vehicle carrying a binder capable of binding the pigment to the fibers and to itself upon loss of water and the product is dried in an atmosphere capable of boiling water from the board.

2,409,629. Manufacture of coated board. Clark C. Heritage, assignor to Wood Conversion Company, Cloquet, Minn. Filed Sept. 9, 1939. 6 claims (Cl. 92-40). This is similar to the previous patent, except that a heat-reactive binding material is stipulated.

2,409.630. Method of making a coated vegetable-fiber board. Clark C. Heritage and Henry E. Walter, assignors to Wood Conversion Company, Cloquet, Minn. Filed Sept. 9, 1939. 4 claims. (Cl. 92-40). The coating agent is lithopone or titanated lithopone and contains from 6 to 20% of diatomaceous earth.

2,409,645. Resin-fiber article and method of making the same. Edward E. Sawyer, assignor to The Canal National Bank of Portland, Portland, Maine. Filed Oct. 21, 1944. 6 claims. (Cl. 74-445). A compacted and bonded assembly of superimposed interfelted fibrous layers and resin hardened and integrated under heat and pressure.

2,409,655. Paper bottle and the like and method of manufacture. James E. Annen, assignor to Sutherland Paper Company, Kalamazoo, Michigan. Filed March 6, 1943. 11 claims. (Cl. 93-39.1).

2,409,673. Fiberboard container having reinforced ends and integral hinged closure. Walter G. Glascoff, Jr., and Charles W. Evert, assignors to Downing Box Company, Milwaukee, Wis. Filed Jan. 12, 1945. 9 claims. (Cl. 229-23).

2,409,692. Container. Curt E. Nyberg, Chicago, Ill., assignor to James F. Barnes as trustee. Filed March 25, 1944. 6 claims. (Cl. 229-51).

2,409,701. Chick box. Gaylord Loth, assignor to The Hinde & Dauch Paper Company, Sandusky, Ohio. Filed July 19, 1944. 2 claims. (Cl. 229-15).

2,409,736. Paper display carton with transparent window. Joseph D. Caimi, Everett, Mass. Filed Sept. 29, 1944. 1 claim. (Cl. 206-44).

2,409,951. Insulating bat. Julian H. Nootens, assignor to United States Gypsum Company, Chicago, Ill. Filed May 7, 1942. 1 claim. (Cl. 154-44). An insulating member formed with corrugated convolutions.

2,409,984. Method of treating water resistant paper. Wendell H. McDowell, assignor to Eastman Kodak Company, Rochester, N. Y. Filed May 15, 1945. 6 claims. (Cl. 117-62). At least one surface of paper coated with a cellulose ester and a plasticizer is wetted with an alcohol containing 1 to 4 carbon atoms and the alcohol is evaporated to inhibit tackiness.

2,409,985. Coating compositions for moisture-proofing by hot melt coating. Martin Salo, assignor to Eastman Kodak Company, Rochester, N. Y. Filed March 18, 1944. 8 claims. (Cl. 260-16). A non-blocking melt-coating composition adapted to give coatings of low moisture vapor permeability consists of at least 40% of a heat-stable butyric acid ester of cellulose, 10 to 40% of di-2-ethylhexyl phthalate, and a blending agent.

2,409,986. Coating compositions for moisture-proofing by hot melt coating. Martin Salo, assignor to Eastman Kodak Company, Rochester, N. Y. Filed March 18, 1944. 7 claims. (Cl. 260-16). This is similar to the previous patent but the fluidity is imparted by an unmodified castor oil.

2,409,997. Creping machine. Louis A. Straubel, Sr., assignor to James W. Straubel, trustee, Green Bay, Wis. Filed Nov. 24, 1944. 9 claims. (Cl. 154-30).

2,409,998. Fluid-tight package. Harry F. Waters, New York, N. Y. Filed Dec. 4, 1941. 4 claims. (Cl. 229-55).

October 29, 1946

2,410,089. Pressure-sensitive adhesive tape. William E. Lundquist and Waldo Kellgren, assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn. Filed Aug. 17, 1944. 8 claims. (Cl. 117-122). A flexible porous paper is impregnated with a synthetic resin.

2,410,126. Machine for impregnating electric insulation. John W. Olson, assignor to Anaconda Wire and Cable Company, New York, N. Y. Filed Sept. 16, 1943. 9 claims. (Cl. 91-13).

2,410,127. Machine for impregnating electric insulation. John W. Olson and Charles W. Bechle, assignors to Anaconda Wire and Cable Company, New York, N. Y. Filed Sept. 16, 1943. 4 claims. (Cl. 91-13).

2,410,148. Heavy-duty paper shipping carton having interlocking end closure. Frederick R. Buhrmaster, assignor to Gaylord Container Corporation, St. Louis, Mo. Filed July 13, 1944. 10 claims. (Cl. 229-47).

2,410,158. Paper hat. Irving Gardner, Brooklyn, N. Y. Filed Aug. 8, 1945. 8 claims. (Cl. 2-195).

2,410,189. Creping machine. Louis A. Straubel and James W. Straubel, Green Bay, Wis.; said Louis assignor to said James W. Straubel, as trustee. Filed Nov. 27, 1944. 8 claims. (Cl. 154-30).

2,410,205. Ligneous resinous composition and method of producing. Millard R. Dusenbury, assignor to Hercules Powder Company, Wilmington, Del. Filed July 31, 1942. 25 claims. (Cl. 260-124). Wood is heated with an aqueous solution of highe. unsaturated fatty acids at 240° to 330° C. under superatmospheric pressure until the cellular structure of the wood disappears; the aqueous product yields a resin.

2,410,249. Warning alarm signal for paper machines. Harry S. Spencer, assignor to Howard Smith Paper Mills Limited, Montreal, Quebec, Canada. Filed Oct. 20, 1943. 1 claim. (Cl. 200-152).

2,410,282. Paper bag having a burlap sampling zone. Pedro A. Frixione, Buenos Aires,

Argentina. Filed Dec. 7, 1944. 4 claims. (Cl. 229-55).

2,410,357. Paper sizing. Donald K. Pattilloch, assignor of one half to Chemical Development, Inc., Chicago, Ill. and one half to George B. Fowler, Springfield, Mass. Filed June 20, 1942. 9 claims. (Cl. 106-79). The sizing agent contains a protein-containing cereal flour, rosin, and alkali silicate.

2,410,393. Box end folding machine. Albert H. Rines, Amesbury, and John Hardy and Daniel J. O'Keefe, Newburyport, Mass., assignors to Hytron Corporation. Filed March 16, 1944. 10 claims. (Cl. 93-49).

November 5, 1946

2,410,433. Dry rosin size and method of making the same. Arthur C. Dreshfield, assignor to Hercules Powder Company, Wilmington, Del. Filed June 14, 1941. 5 claims. (Cl. 260-105). Rosin is saponified under substantially atmospheric pressure with a concentrated aqueous solution of an alkali metal carbonate to the extent of 80% and the paste is further saponified with concentrated alkali hydroxide at a temperature of between 135° and 180° C.

2,410,486. Foldable box. Guy J. Evans, Buffalo, N. Y. Filed May 29, 1943. 2 claims. (Cl. 229-42). Partitioning means for dividing the space in a container.

2,410,526. Pulp stock flow control. John A. Rosmait, assignor to D. J. Murray Manufacturing Co., Wausau, Wis. Filed Oct. 2, 1944. 8 claims. (Cl. 92-46). Means for initially decelerating the flow of effluent stock discharged from the surge box, means for spreading the stock while under considerable pressure and delivering it into the lower portion of the first pass of the head box throughout the entire width of the latter, and means for locally varying the cross-sectional area of the delivery means to insure uniform distribution of the stock.

2,410,586. Laminated materials. Alan R. McGarvey, assignor to Armstrong Cork Company, Lancaster, Pa. Filed Nov. 28, 1940. 7 claims. (Cl. 151-40). Asphalt-saturated felts are bonded together with a mixture comprising an aqueous rubber dispersion and a hydraulic-setting cement.

2,410,587. Mechanism for partially closing containers. Charles Z. Monroe, assignor to The American Paper Bottle Company, Toledo, Ohio. Filed Jan. 14, 1943. 6 claims. (Cl. 93-36.8). Apparatus for partially folding the foldable end closures of paper containers.

2,410,591. Fiberboard cushioning filler for cartons. William E. Turner, assignor to O. B. Andrews Company, Chattanooga, Tenn. Filed Feb. 12, 1945. 1 claim. (Cl. 229-42). A blank of fiberboard divided by transverse score lines into sections.

2,410,685. Hot melt-coat composition. Martin Salo and Harold F. Vivian, assignors to Eastman Kodak Company, Rochester, N. Y. Filed Oct. 18, 1945. 9 claims. (Cl. 106-181). A non-blocking hot melt-coating composition contains a cellulose ester having a butyryl content of at least 42% and 25 to 100% of a mixture of butyl stearate and a phthalate.

November 12, 1946

2,410,858. Combined envelope and writing sheet. Henry F. Auger, assignor of one-half to Lewis H. Peters, Medford, Mass. Filed April 24, 1945. 1 claim. (Cl. 229-72).

2,410,964. Digester unit. Joaquin J. de la Roza, Sr., New York, N. Y. Filed March 29, 1944. 2 claims. (Cl. 92-18). A continuous multistage digester unit.

2,411,015. Receptacle for waste disposal. Barry S. Wolff, Millington, and Herman Gottesman, Park Ridge, N. J. Filed May 11, 1944. 1 claim. (Cl. 229-23).

2,411,042. Machine for dewaxing and lacquering paper shotgun shell cartridges. William N. King, Nicholas A. Romanchuk, and Wilbert H. Ward, assignors to Federal Cartridge Corporation, Minneapolis, Minn. Filed Sept. 16, 1944. 10 claims. (Cl. 91-13).

2,411,066. Manufacture of deposited paper products. Leslie Stevens, Glen Ridge, N. J. Filed Sept. 26, 1939. 2 claims. (Cl. 92-57). Apparatus for forming one-piece cone-shaped articles.

2,411,082. Cup forming machine. Eugene Conti, assignor to Herz Manufacturing Corporation, New York, N. Y. Filed Feb. 27, 1943. 23 claims. (Cl. 93-60).

2,411,134. Carton blank. Russell A. Lambert, assignor to Brooks Bank Note Company, Springfield, Mass. Filed Sept. 4, 1944. 1 claim. (Cl. 229-33). A carton blank formed and hinged for folding into a receptacle having a cover and separate cover-retaining means.

November 19, 1946

2,411,144. Method of making knocked-down boxes and improved cartridge containers. Robert Morris Bergstein, Cincinnati, Ohio. Filed Nov. 3, 1941. 6 claims. (Cl. 93-49).

2,411,195. Bottle carrier. Jean F. De Villard, assignor to Charles W. Stiefel, Jr., Chicago, Ill. Filed Nov. 16, 1940. 1 claim. (Cl. 224-45).

2,411,416. Papermaking apparatus. Frederick A. Dieckbrader, assignor to The Hinde & Dauch Paper Company, Sandusky, Ohio. Filed Oct. 6, 1943. 4 claims. (Cl. 92-41). A device for continuously applying a layer of filling material to paper stock adhering to the underside of the felt during its travel between cylinders at the wet end of a cylinder paper machine.

November 26, 1946

2,411,536. Method for producing alkyl esters of higher fatty acids. Frederick H. Gayer and Charles E. Fawkes, assignors to Continental Research Corporation, Chicago Heights, Ill. Filed Jan. 21, 1942. 14 claims. (Cl. 260-97.5). A mixture of tall oil and an excess of a low molecular weight monohydric aliphatic alcohol is heated under superatmospheric pressure at a temperature up to 200° C. until the fatty acids are completely esterified.

2,411,580. Container wall. Willard O. Manor, assignor to Consolidated Paper Company, Monroe, Mich. Filed Sept. 30, 1943. 1 claim. (Cl. 117-82). A container wall consists of an outer layer of fibrous material and an inner dual coating layer impermeable to asphaltum (the first layer consists of clay and adhesive and the second of methylcellulose and starch).

2,411,622. Molded carton construction. Reynolds Guyer and Robert M. Dunning, assignors to Waldorf Paper Products Company, St. Paul, Minn. Filed Oct. 4, 1943. 7 claims. (Cl. 229-3.5). The corners of the panels contain a thermoplastic material, permitting the corners to retain a predetermined form.

2,411,741. Color matching apparatus. Jesse L. Michaelson, assignor to General Electric Company, Schenectady, N. Y. Filed Dec. 13, 1939. 7 claims. (Cl. 88-14).

2,411,824. Method of preparing a dry size. James K. Farrell, assignor to Hercules Powder Company, Wilmington, Del. Filed May 14, 1945. 6 claims. (Cl. 260-105). An aqueous mixture of saponified rosin (containing from 22 to 30% by weight of water) at a temperature of 340° to 380° F. and under a pressure of 100 to 200 pounds per square inch is introduced into a drying atmosphere at 240° to 325° F., giving a dry size with about 8% moisture and an apparent density of 20 to 35 pounds per cubic foot.

December 3, 1946

2,411,989. Paper coating. Henry V. Dunham, assignor to The Borden Company, New York, N. Y. Filed Feb. 5, 1942. 9 claims. (Cl. 117-156). A high-protein content seed meal is extracted with 4 to 10 times its weight of an acid solution (equal to 3.8 to 6 pounds of hydrochloric acid per 100 pounds of meal) and the degummed meal is mixed with about 1.67% sodium hydroxide and a pigment, thus forming a coating agent.

2,412,004. Threaded closure for paper containers. Frank J. O'Brien, assignor to Continental Can Company, Inc., New York, N. Y. Filed Dec. 8, 1943. 1 claim. (Cl. 229-5.5).

2,412,031. Carton for sealing by immersion. Samuel Bergstein, assignor to Robert M. and Frank D. Bergstein, Cincinnati, Ohio. Filed June 5, 1944. 7 claims. (Cl. 229-37).

December 10, 1946

2,412,369. Carton forming machine. Eugene S. Tascher, assignor to National Biscuit Company, New York, N. Y. Filed May 24, 1945. 12 claims. (Cl. 93-51.1).

2,412,370. Carton forming and filling machine. Eugene S. Tascher and William Bazant, assignors to National Biscuit Company, New York, N. Y. Filed April 17, 1941. 4 claims. (Cl. 93-3).

2,412,402. Automatically locked fiberboard shipping box. Joseph G. Huye, New Orleans, La. Filed Oct. 30, 1944. 4 claims. (Cl. 229-45).

2,412,450. Display box. Raymond E. Fink, assignor to National Folding Box Company, New Haven, Conn. Filed Feb. 25, 1944. 2 claims. (Cl. 206-44).

2,412,501. Bag manufacture. Charles E. Gardner, assignor to Wingfoot Corporation, Akron, Ohio. Filed Dec. 24, 1943. 2 claims. (Cl. 93-35). Method of forming a square-bottom bag.

2,412,534. Impregnated composite board. Boardman M. Randall, assignor to TekWood, Inc., Lakeport, N. H. Filed Dec. 5, 1942. 4 claims. (Cl. 154-133). A compressible resin-impregnated carrier sheet is used between two wood veneer sheets.

2,412,544. Reusable collapsible liquid carrying and dispensing container. Harry F. Waters, New York, N. Y. Filed May 29, 1942. 9 claims. (Cl. 229-14). A flat-folded erectable lined carton.

2,412,546. Method of packaging. Harry F. Waters, New York, N. Y. Filed Dec. 6, 1941. 4 claims. (Cl. 93-49). Method of closing a carton having at least two pairs of opposed panels with closing flaps at the ends thereof.

2,412,547. Crushproof reinforced paperboard package with liquid-tight liner and method of making same. Harry F. Waters, New York, N. Y. Filed Dec. 18, 1941. 1 claim. (Cl. 229-14). A composite laminated sheet for forming flat-folded packages.

December 17, 1946

2,412,592. Varnish paper liner facing material. Curtis E. Maier, assignor to Continental Can Company, Inc., New York, N. Y. Filed July 21, 1943. 6 claims. (Cl. 117-76). The paper base is coated with a synthetic resin film.

2,412,652. Processes relating to the production of board and the product resulting therefrom. Fritz Rosenthal, assignor to The University of Tennessee Research Corporation, Knoxville, Tenn. Filed May 14, 1943. 9 claims. (Cl. 260-9). The board is formed from cottonseed hull bran and a resinous composition from pine wood.

2,412,666. Liquidproof fiberboard carton with bellows closure. Julius A. Zinn, Jr., Belmont, Mass. Filed Feb. 22, 1944. 3 claims. (Cl. 229-16).

2,412,693. Method and tape for joining plies. Gordon G. Pierson, Lansdale, Pa. Filed Jan. 26, 1940. 7 claims. (Cl. 154-118). Veneer strips are joined to a base by adhesives, using a tape of moisture and glue-permeable paper.

2,412,733. Drier drum. Lloyd Hornboatel, assignor to Beloit Iron Works, Beloit, Wis. Filed Jan. 29, 1944. 2 claims. (Cl. 257-95).

2,412,771. Method of making paper on cylinder mold type paper machines. Philip H. Goldsmith, New Rochelle, N. Y. Filed Sept. 27, 1938. 1 claim. (Cl. 92-38).

2,412,798. Multisided shipping container with automatically locking slip cover. Smith A. Blackman, assignor to Gaylord Container Corporation, St. Louis, Mo. Filed Oct. 16, 1944. 1 claim. (Cl. 229-45).

2,412,818. Separation of the components of a mixture of fatty acids and rosin acids. Joseph J. Lovas and James F. Loughlin, Ridgewood, and New York, N. Y. Filed Aug. 1, 1942. 2 claims. (Cl. 260-97.5). The mixed acids are reacted with ethylenediamine at an elevated temperature to form a fatty acid amide, which is separated by cooling a solution in methanol, carbon tetrachloride, or hexane.

December 24, 1946

2,413,007. Liner coating composition. Alfred A. Srere, assignor to The Miami Valley Coated Paper Co., Franklin, Ohio. Filed March 27, 1944. 2 claims. (Cl. 106-137). A coated liner for application to the interior of a fibrous package consists of 1600 pounds of talc, 400 pounds of kaolin, 220 pounds of protein, 11 pounds of caustic soda, 3 gallons of glycerin, and 380 gallons of water.

2,413,048. Logging apparatus. Jesse L. Hurd, Pierce County, Wash. Filed Sept. 19, 1945. 8 claims. (Cl. 214-65.3). A logging apparatus adapted for use with a tractor.

2,413,144. Method of finishing containers impregnated with wax. William N. King, assignor to Federal Cartridge Corporation, Minneapolis, Minn. Filed Aug. 22, 1944. 5 claims. (Cl. 117-63). Method of finishing shotgun shells fabricated with wax-impregnated paper.

December 31, 1946

2,413,315. Combined bottle carrier and carton. John K. Darragh and Harold E. Rue, assignors to Pabst Brewing Company, Chicago, Ill. Filed April 8, 1942. 7 claims. (Cl. 229-28).

2,413,321. Method of producing alkaline earth metal sulphites and product thereof. Gerald Haywood and Wright M. Welton, assignors to West Virginia Pulp and Paper Company, New York, N. Y. Filed March 13, 1941. 16 claims. (Cl. 23-129). A method of reacting an alkaline earth metal carbonate with an acid sulphiting agent.

2,413,331. Heat insulation. Carl G. Munters, Stockholm, Sweden. Filed April 5, 1941. 3 claims. (Cl. 154-45). A combination of plane and corrugated sheets of paper.

2,413,409. Steam-shower for corrugators. Thomas S. Fitchett, Henry B. Greenwood, and William G. Shackelford, assignors to F. X. Hooper Company, Inc., Glenarm, Md. Filed Oct. 5, 1943. 12 claims. (Cl. 91-18).

2,413,449. Method of making sealed fiber containers and closures therefor. Alexander G. Hatch, assignor to Continental Can Company, Inc., New York, N. Y. Filed Feb. 26, 1944. 5 claims. (Cl. 93-55.1).

2,413,453. Container closure. William C. Kesler and Victor A. Ryan, assignor to Crown Cork & Seal Company, Inc., Baltimore, Md. The cap has a cushion liner formed of a mixture of 10 to 25% kraft pulp and 85 to 75% waste news pulp.

2,413,500. Laminated structure. Fred E. Hummel, assignor to Hummel-Ross Fibre Corporation, Hopewell, Va. Filed Jan. 22, 1945. 1 claim. (Cl. 154-43). Each layer of the laminated body has a multiplicity of closely spaced holes formed from opposite sides of the paper.

2,413,567. Drier drum having heat-exchange-fluid supply and removal means. Lloyd Hornbostel, assignor to Beloit Iron Works, Beloit, Wis. Filed April 10, 1944. 6 claims. (Cl. 34-124).

2,413,581. Web splicing apparatus. Oscar C. Roesen, assignor to Wood Newspaper Machinery Corporation, Plainfield, N. J. Filed June 14,

1944. 16 claims. (Cl. 242-58).

2,413,583. Bleaching of groundwood. Russell C. Shearer, assignor to St. Regis Paper Company, New York, N. Y. Filed Aug. 11, 1945. 9 claims. (Cl. 8-104). Groundwood is bleached with alkaline solutions of hydrogen peroxide or solutions of alkali metal peroxides at the point of abrasion.

2,413,649. Pay statement and envelope assembly. Elmer G. Overly, assignor to Pittsburgh Lithograph Press Corporation, New York, N. Y. Filed June 30, 1943. 2 claims. (Cl. 229-69).

TAPPI and Superintendents at Kalamazoo

The annual Paper Makers Get Together of the Kalamazoo Valley Section of TAPPI and the Michigan Division of the Superintendents Association at the Park-American Hotel, Kalamazoo, Mich., on January 16th was as usual a real success with 334 in attendance. Robert Mashburn, Chairman of the TAPPI Section presided. Peter J. Massey, general manager of the Bryant Division of the St. Regis Paper Company, was toastmaster.

Mr. Massey called upon George H. Gerpheide of the Hawthorne Paper Company who spoke in tribute to the late Jacob Kindleberger, founder of the Kalamazoo Vegetable Parchment Company, who died on New York's Day.

The principal speaker was Reuben Robertson, Jr., Vice President of the Champion Paper & Fibre Company, who talked on "The Human Side of Papermaking." Mr. Robertson declared that today personnel management is the most important of management's responsibilities. New trails need to be blazed to provide workers with security, a fair share of the profits, supervisors that they can respect, information concerning the business that they are connected with, hearing for their ideas, old age savings, and opportunity to advance.

In discussing the wage structure Mr. Robertson said that the system must be sound and must be understood, and made so through job evaluation studies. Such a program may clear up many fundamental causes for grievances and misunderstandings.

"The use of incentives and group bonus plans are often a real stimulus to greater productivity if they are fair, carefully explained and do, in fact, represent a real opportunity for increased earnings through improved performance. Under these circumstances they tend to make a man feel more a part of the team, to have a greater interest in the results, and to feel that he is sharing in the profits."

Kalamazoo TAPPI to Discuss Water

The February meeting of the Kalamazoo Valley Section of TAPPI will be held at the Columbia Hotel on Thursday, February 6th at 6:30 p.m. The meeting will be presided over by R. Mashburn, while the program will be in charge of M. Galbraith.

The first speaker of the evening will be C. E. Mueller of the Bulkley-Dunton Company and his subject will be "Description and Operation of the Sveen Pederson Save-All."

The second speaker will be Robert MacGonagle, Technical Representative of the Philadelphia Quartz Company and he will talk on "The Use of Activated Silica Sols in Paper Mills." Mr. MacGonagle will also demonstrate the activation of silica and some of the properties of silica sols, stressing in particular their flocculating ability.

The discussion period following the talks will have an added attraction in that technical representatives of the Sutherland Paper Company will be present and have agreed to be available for questioning relative to their installation of the Sveen Pederson Save-All.

TAPPI Notes

J. Mair has succeeded J. P. Rubush as the official representative of Goslin-Birmingham Mfg. Company, Box 631, Birmingham 1, Ala., in the Technical Association.

The Lithographic Technical Foundation will conduct an intensive course in the fundamentals of lithograph for executives at the New York Trade School, 304 East 67th Street, New York, N. Y., beginning February 17th. Details may be obtained from the Director of the New York Trade School.

The TAPPI Lakes States Section will meet at the American Legion Club House, Appleton, Wis., on Tuesday evening, February 11th at 6 p.m. The program has not been announced.

The TAPPI Ohio Section will meet at the Manchester Hotel, Middletown, Ohio, on Tuesday, February 4th at 6:30 p.m. There will be a panel discussion on "What the War Has Taught Us About Starch." The speakers will be E. C. Hendrickson, Mead Corporation; D. G. Goodman, Sorg Paper Company; Douglas Marsh, Champion Paper & Fibre Company and Nelson Bensing, Champion Paper & Fibre Company.

The TAPPI Delaware Valley Section will meet at the Engineers Club, Spruce Street, Philadelphia, Pa., on Friday evening, February 7th at 6:50 p.m. Douglas Fronmuller of the Scott Paper Company will talk on "Felt Control in a Paper Mill."

The Western New York Group of the Empire State Section of TAPPI will hold its monthly meeting at the Prospect House in Niagara Falls, N. Y., on Wednesday, February 12th. William A. Diament, Vice President of Fischer and Porter Co., will speak on "Flow Rate Instruments for the Pulp and Paper Industry." His talk will be illustrated by an exhibition of indicating, recording and totalizing instruments.

James D. Studley, formerly of the Office of the Surgeon General, U. S. Army, is now technical assistant to the Committee on Paper and Paper Products, Federal Specifications Board, Washington, D. C.

Arthur G. Dreis of the Hercules Powder Company, has been transferred from Marrero, La., to Holyoke, Mass.

Maurice W. Phelps, formerly with the Solvay Process Company, has joined Peter J. Schweitzer, Inc., Spottswood, N. J., in an executive capacity.

C. S. Yung, who has been traveling in the United States, has returned to the Hung Wen Paper Mill Company, Shanghai, China, as an electrical engineer.

Rex W. Hovey is now vice president of the Oxford Miami Paper Company as well as the Oxford Paper Company, New York, N. Y.

H. F. Schenk has uscceeded C. S. Hardy as official representative of the Magnus Metal Corporation, Fitchburg, Mass., in the Technical Association.

Carleton Ellis, Jr., manager of the New Products Department, Plaskon Div., Libby Owens Ford Glass Company, has uscceeded Whiting N. Shepard as official representative in the Technical Association.

Milton Jacobs has been made a member of the firm of Chas. T. Main, Inc., Boston, Mass.

Felix L. Harstad, superintendent of the Berger Langmoen Wallboard Mill, Brumunddal, Norway, is now visiting in the United States.